

RAILWAY AGE

THE STANDARD RAILROAD WEEKLY FOR ALMOST A CENTURY

A.R.E.A. PRE-CONVENTION AND EXHIBIT-IN-PRINT NUMBER



MARCH 12, 1951

42442



• Lackawanna track scene

... In Peace and War

These steel arteries are again called upon to carry the burden of our defense.

During World War II the American railroads carried more than 90 per cent of all military freight and more than 97 per cent of all organized military travel.

The Strongest is the Most Economical

THE RAIL JOINT COMPANY Inc.
50 CHURCH ST. NEW YORK 7, N. Y.

**Are You Taking Full
Advantage of Carrier?**

American railroads installed 107,445 miles of communication circuits in 1950. 98,380 miles (95%) were provided by carrier!

Automatic Electric

meets your growing communication needs

with *Lenkurt Type 33* **Carrier Systems**

Automatic Electric brings you low cost circuits—Type 33 Carrier systems are unusually economical for long and medium-haul applications; they "prove-in" on circuits as short as ten miles. And they provide to an exceptional degree the recognized advantages of carrier—stability, and freedom from "echo" and interference.

Easily adaptable—1 to 3 channels of Type 33 Carrier telephone equipment can be installed initially, or the two higher-frequency channels can be added to existing single-channel systems. Here is *usable capacity* that is easy to adapt to your needs.

Write for Bulletin 33A-P20, on Type 33 stackable, 3-channel carrier systems. Or put your problems up to Automatic Electric engineers for their specific recommendations.

Manufactured for

AUTOMATIC ELECTRIC

Makers of Telephone, Signaling and Communication Apparatus... Electrical Engineers, Designers and Consultants

Distributors in U. S. and Possessions: **Automatic Electric Sales Corporation**
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1033 West Van Buren Street, Chicago 7, U. S. A.

for an
XI
Ride
THAT
Protects
LADING
AND
ELIMINATES
DAMAGE
CLAIMS

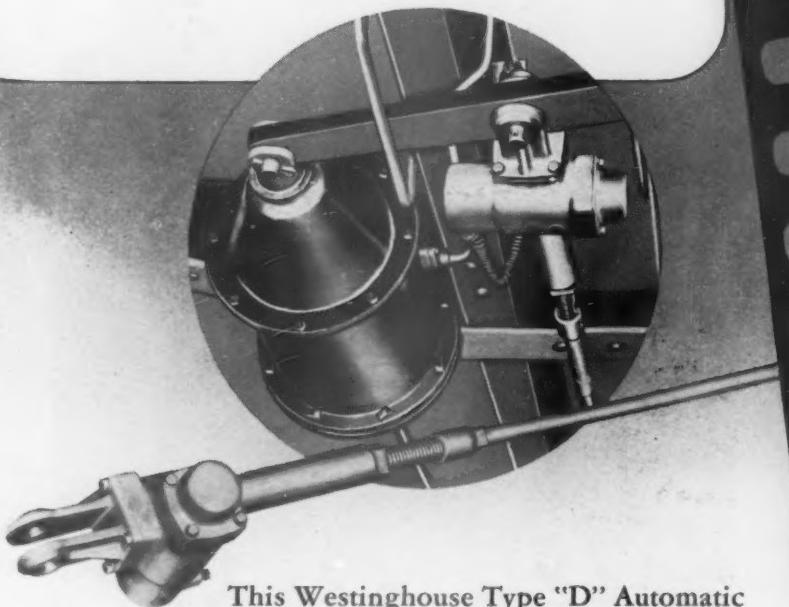
THE *New*
XI
Ride

Snubber CLASS C-4-S
W. H. MINER, INC., CHICAGO

W.H.MINER,INC.
CLASS C-4-S
TRUCK SPRING
SNUBBER
PATENTED



WESTINGHOUSE
Type "D"
PNEUMATIC
Automatic Slack Adjuster



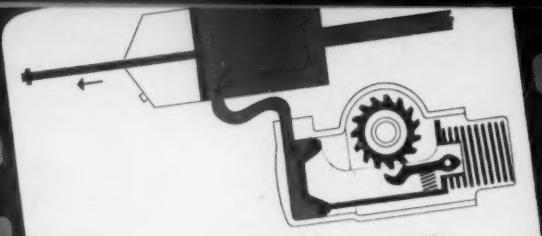
This Westinghouse Type "D" Automatic Pneumatic Slack Adjuster eliminates the involved, time-consuming manual adjustment of rigging on cars in classification yards. Simple design (only half a dozen rugged parts) assures long, trouble-free service with minimum attention.



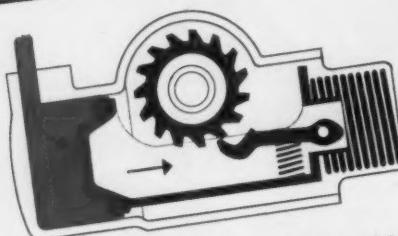
Ask for Descriptive Leaflet No. 2468.

W Westinghouse Air Brake Co.

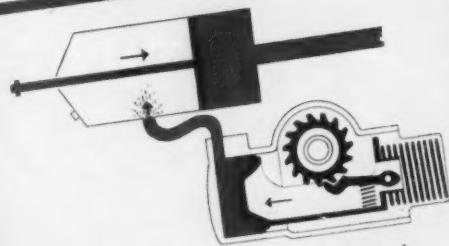
WILMINGTON, PA.



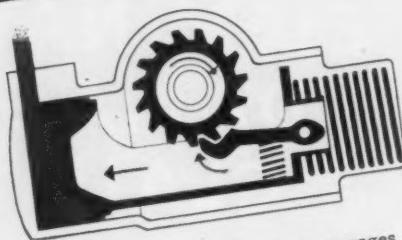
Excessive piston travel in air brake cylinder uncovers port, admits air to slack-adjuster cylinder.



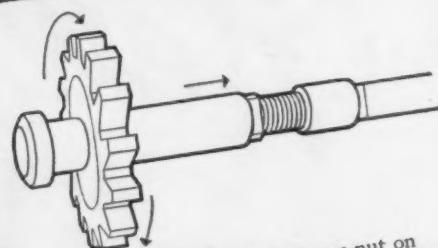
Air pressure moves slack adjuster piston back, compressing piston spring.



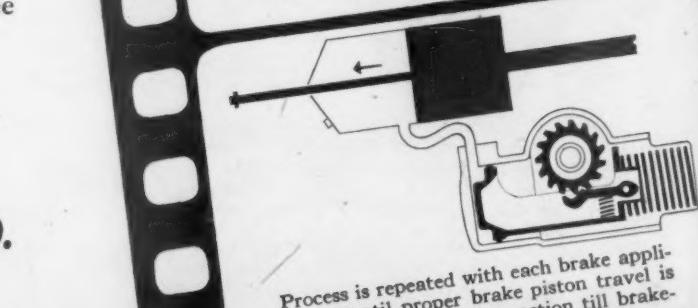
When brake is released, air in slack adjuster piston is vented. Piston spring returns slack adjuster piston.



Pawl on slack adjuster piston engages ratchet nut . . . advances it one notch.



Rotation of ratchet nut turns nut on tie rod, shortening the connection.



Process is repeated with each brake application until proper brake piston travel is established. No further action till brake-shoe wear calls for further adjustment.

RAILWAY AGE

With which are incorporated the Railway Review, the Railroad Gazette, and the Railway-Age Gazette. Name Registered in U. S. Patent Office and Trade Mark Office in Canada.



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IN THIS ISSUE

EDITORIAL COMMENT

"Straining at a Gnat and Swallowing a Camel"	55
More Supervision Needed for Work Equipment	56
The Procurement Value of the Scrap Supply	57

A.R.E.A. SECTION

Highlights of A.R.E.A. Research Activities, by G. M. Magee	58
Construction and Maintenance Expenditures Heading for New Highs	62
Well-Balanced Program for A.R.E.A. Meeting	66
Suppliers "On Their Toes" in Filling Railroads' Needs	68
Exhibit in Print — New and Improved Products of the Manufacturers	69

GENERAL ARTICLE

First New British Standard Locomotive, by E. G. Poultnay	85
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DEPARTMENTS

General News	89
Railway Officers	106
Freight Operating Statistics	114

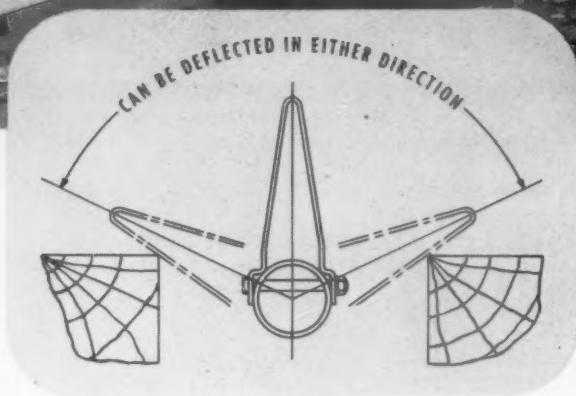
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 Railway Signaling & Communications Car Builders' Cyclopedias Locomotive Cyclopedias
 Railway Engineering & Maintenance Cyclopedias American Builder
 Marine Engineering & Shipping Review Marine Catalog & Buyers' Directory
 Books covering transportation and building

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Here's Protection
At Low
Cost!



SRD-5
"UNION" SELF-RESTORING
DRAGGING EQUIPMENT DETECTOR

With "Union" Self-Restoring Dragging Equipment Detectors on guard at approaches to interlockings, tunnels, etc., you receive continuous, automatic protection at such locations without the need for replacing the detecting elements after each operation.

When the detector plates are deflected in *either* direction by dragging equipment, the circuit controller sets the wayside signal ahead to warn the engineman. And since it restores itself automatically and immediately after each operation, the "Union" Self-Restoring

Dragging Equipment Detector is always ready to police following trains.

The restoring mechanism of the SRD-5 is located inside the operating shaft and all parts . . . except for the easily removable detector plates . . . are beneath the tops of the ties. Moreover, it is only necessary to remove the outside plates to permit use of the usual ballast cleaning machines. Consequently, interference to such equipment is minimized.

Ask our nearest district office for full particulars.

UNION SWITCH & SIGNAL COMPANY

SWISSVALE

NEW YORK CHICAGO



PENNSYLVANIA

ST. LOUIS SAN FRANCISCO

WEEK AT A GLANCE

A. R. E. A.: At Chicago, from March 13 through 15, the American Railway Engineering Association will hold its 50th annual convention—to a preview of which most of this issue is devoted. The program for the meeting is outlined on page 66, and printed in detail on page 67.

CONTINUING RESEARCH: To an extent probably unknown to the public and doubtless unappreciated even by many railroad men, the railroads carry on a program of constant and intensive research to improve their tracks, their bridges and their buildings. In 1950, for example, such work included, among other things, studies of shelly rail, rail and joint bar failures, tie wear, train speeds on curves, impact on bridges and roadbed stabilization. The 1951 research program, backed by a larger budget, includes 30 separate projects. What has been done, and is being planned, is told, beginning on page 58, by G. M. Magee, research engineer of the A.R.R.'s Engineering Division.

EXHIBIT IN PRINT: For reasons explained on page 68 by its president, H. M. McFarlane, the National Railway Appliances Association is not holding its usual exhibition in connection with this year's meeting of the A.R.E.A. In lieu of this physical exhibit, Mr. McFarlane calls attention to the "Exhibit in Print" in this issue (pages 69 through 84, inclusive), in which are described 59 new or improved products of various manufacturers which are of special interest to railroad construction and maintenance-of-way officers. Two prepaid business reply postcards, designed for convenience in obtaining further information on any of the products described, are included on pages 83 and 84.

"IT STINKS": That, verbatim, is what Oregon's Senator Morse has said about the government's seizure of the railroads in the "ops" wage case. There are a lot of things in the railway labor situation to which that term might be applied, but the senator, our news story indicates, confined his remarks to those features of it which seem likely to win him acclaim from spokesmen for the brethren—who may have to do some tall talking on their own account if those new unions in Ohio really get going. (Page 94.)

LESSON IN ECONOMICS: Nassau county lies out on Long Island, just east of New York City. Thousands of its residents commute to and from New York on the Long Island Rail Road. For many years, therefore, it has been both popular and politically profitable for county officials to make the railroad a sort of "whipping boy"—to criticize its service, to oppose its legitimate requests for higher fares, to "milk" it for constantly increasing taxes. Then, two years ago, the inevitable happened—the railroad went "broke." As a result, the New York state legislature is seriously considering some form of public ownership or public support for the railroad; either one, apparently, would carry with it partial or complete tax exemption and also partial or complete freedom from government regulation of

fares. And so—apparently with some reluctance, and to make the best of a bad situation which they themselves have assisted in creating—Nassau County officials have "acknowledged wage increases, safety provisions and improvements in service and equipment will necessitate higher fares." It's unfortunate that a railroad had to go into bankruptcy, and be threatened with public ownership, to teach a few county officials a lesson in elementary economics—but the lesson may, in the end, turn out to have been a valuable, if costly, by-product.

ANOTHER NEW EXPENDITURE RECORD: Partly because of stratospheric costs, but mostly, of course, to meet the needs of traffic, the railroads of the United States and Canada will probably spend around \$2.2 billion in 1951 for additions and betterments to fixed property, maintenance of way and structures, and new work equipment and power tools. As pointed out in the detailed forecast starting on page 62, maintenance expenditures are likely to reach a new all-time record; work equipment buying should closely approach the 1947 high, and improvements will be above any year since 1930. Work equipment—rather the necessity of adequate supervision for it—is also the subject of an editorial on page 56.

NEWS HIGHLIGHTS: Prudential Insurance Company to construct \$30 million office building over Illinois Central tracks in Chicago.—L. & N. orders 67 diesels; K.C.S. four.—Pennsylvania to spend \$2 million on first phase of large-scale, long-term program for installation of inductive automatic speed control.—Erie orders 1,000 freight cars; W.M. inquires for 1,000.—John Elliot heads British Railway Executive.—New rail unions being organized in Ohio.—Senate committee gets more time for transport report.—B. & M. to handle bottled milk with mechanical refrigeration.—Gurley attacks Security Resources Board's rail seizure plan.—D.S.S. & A. all diesel powered.—Senate study proposed to assure materials for freight cars.—Knudson sees "worst transportation situation" ahead, as net freight car shortages increase to more than 36,500.

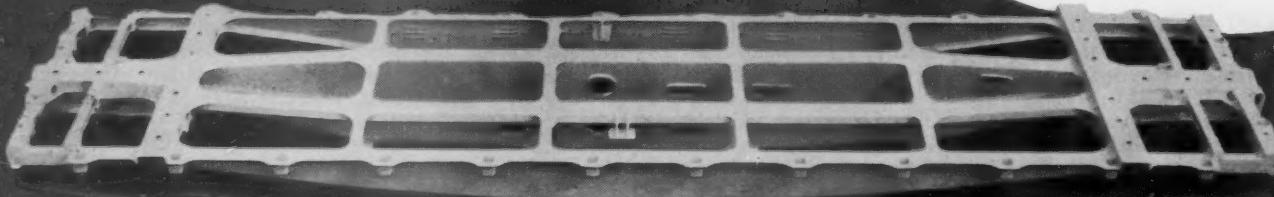
THE GNAT AND THE CAMEL: The contrast between the government's effort to eliminate alleged subsidies on second class mail, and its complete lack of interest in eliminating the much, much larger subsidies given to other interests, particularly in the field of transportation, is the subject of this issue's leading editorial—page 55. And, incidentally, speaking of mail, our news report of testimony presented to the I.C.C. in the mail pay case by H. B. Brand of the A.C.L. is pretty interesting and informative—and more than slightly nauseating. It confirms the belief expressed to a group of financial analysts at New York by our own Bill Schmidt—that if the P.O. Department really goes through with its plan to truck mail, both it and the truckers who may be unlucky enough to get the contracts will learn some of the more unpalatable economic facts of life, which the railroads have already learned through bitter experience.

An Important Contribution

COMMONWEALTH CAST STEEL UNDERFRAMES

For the Large
Freight Car Program

One piece underframe
for Illinois Central
M. & O. and Atlantic
Coast Line pulpwood cars.



One piece underframe for G. M. & O.
and Union Pacific flat cars.

GENERAL STEEL CASTINGS

GRANITE CITY, ILL. • EDDYSTONE, PA.



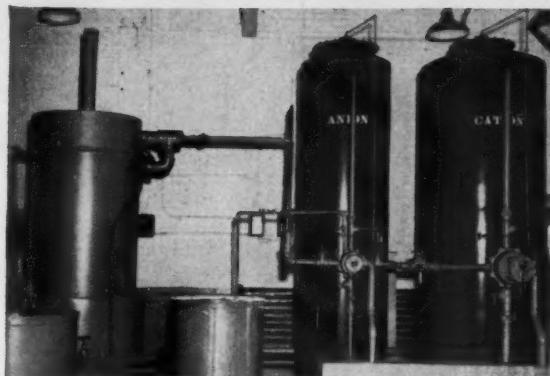
As part of the Defense Preparedness Program, America's railroads placed orders in 1950 for 2000 COMMONWEALTH One-Piece Cast Steel Underframes for flat cars, pulpwood cars and "special service" freight cars.

The one-piece construction, with metal distributed where it is needed most, provides exceptional strength without increase in weight, eliminating welded or riveted joints and connections, and saving manpower in car building.

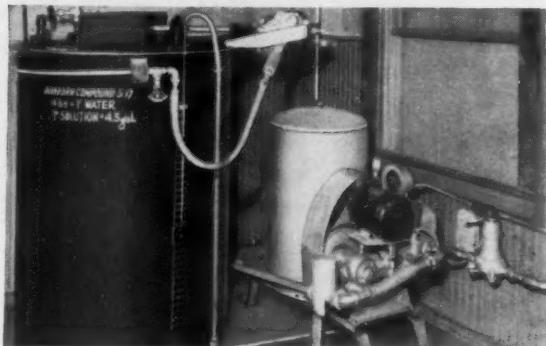
COMMONWEALTH Underframes are practically indestructible. They assure increased availability of freight cars with longer service-life and greatly reduced upkeep costs.

Consult us about your requirements.

FOLLOW THE DEARBORN 3-STEP PROCEDURE FOR NON-CORROSION DIESEL COOLING WATER



Dearborn 2-Bed De-Ionization System delivering 40,000 gallons of high-purity water daily.



This compact Dearborn equipment set-up supplies 517 treatment for four railroads at a single terminal.



Dearborn Chromokit. A quick, inexpensive test for chromate content of Diesel cooling water.

1. A DEARBORN DE-IONIZING SYSTEM

To obtain mineral-free water for cooling Diesel engines, do it by de-ionization, at only a fraction of the cost of distilled water. Dearborn is today assisting railroads across the country in this important work. Your inquiry is invited. A Dearborn engineer will gladly recommend the size and type of system exactly suited to your needs. For complete information on what such a system will cost—and save—the following is necessary: (1) Mineral analysis (or 1/2-gallon sample) of raw water supply; (2) average daily gallonage and maximum hourly delivery rate required; (3) size of raw water supply line together with maximum and minimum pressures; (4) space available for installation of system. An inquiry will entail no obligation.

2. DEARBORN TREATMENT 517

Once the high quality water is obtained, it should be further treated to bring the water into proper chemical balance to eliminate the possibility of corrosion. An effective, low cost treatment for this purpose is Dearborn Formula 517 which supplies the cooling water with chromate, a principal inhibitor of ferrous metal corrosion. Once this system is installed, it is a simple matter to control the Dearborn 517 treatment to keep chromate concentrations up to strength with the newly developed Dearborn Chromokit described below.

3. THE DEARBORN CHROMOKIT

The Dearborn Chromokit makes it easy to check Diesel cooling water for proper chromate strength.

This is all you do: 1. Take sample of cooling water; 2. Place one drop on chemically treated test card; 3. Match color of spot against standard color guide for chromate strength; 4. Check against Treatment Adjustment Chart and add chromate treatment as indicated.

The Chromokit makes it easy, inexpensive and accurate. It eliminates time-consuming laboratory tests and expensive equipment. It's compact (only 5 3/4 x 3 1/2 x 3 3/4 in. overall), convenient and simple. Detailed instructions are included. Requisition one today.

Dearborn Chemical Company
310 S. Michigan Ave., Dept. RA
Chicago 4, Illinois

Gentlemen: Please send complete information on the Dearborn 3-Step Procedure for Diesel Cooling Water.

Name.....

Railroad.....

Address.....

City..... State.....

Dearborn
TRADE MARK REGISTERED

THE LEADER IN WATER TREATMENT AND RUST PREVENTIVES

Unicel



PRESSED STEEL CAR CO., INC.



Stays Strong!

This rigid, one-piece, cast-steel beam (without rivets, welds, laps, or joints) retains its high initial strength indefinitely. There's nothing to shake loose—nothing to fall off—nothing for corrosion to attack except extra-thick metal sections of strong Grade "B" cast steel. Proper alignment of levers and rods is preserved, and piston travel requires resetting only as brake shoes wear.

For service and savings there's nothing like A.S.F. one-piece, cast-steel construction which permits the complete renewal of burned heads by welding-on replacement facings. This beam should last the lifetime of the car.

the Stronger, Lighter

A·S·F CAST-STEEL UNIT BRAKE BEAM



AMERICAN STEEL FOUNDRIES
MINT MARK OF  FINE PRODUCTS



The Livestock



SINCLAIR
RAILROAD

"Special"

LUBRICATED BY SINCLAIR



Here is the nation's speediest stock train — the Union Pacific's "Daylight Livestock Special." In it, cows, hogs, and sheep can ride in comfort, shock-cushioned and gliding along on roller-bearings.

These 80-car trains operate from Ogden to Los Angeles, often traveling 60 m.p.h., eliminating the stop at Las Vegas for feed, water and rest. Thus, livestock now reach California in less time and in good condition.

The multiple-unit Diesels that power these Daylight Livestock Specials use Sinclair Gascon Oil as do most of the locomotives of the Union Pacific.

SINCLAIR GASCON®—Incomparable for Diesel lubrication.

Today, more than 60 U. S. railroads are using these fine lubricants, in locomotives pulling long freights and celebrated streamliners. Their service record over the years is unsurpassed. For clean engines and the most effective protection for your Diesels, use Sinclair Gascon Oils.

LUBRICANTS

Sinclair Refining Company, Railway Sales • New York • Chicago • St. Louis • Houston



for
car
building
speed
... economy



*Costs Come Down
Under the Airco Plan*



AIR REDUCTION

AIR REDUCTION SALES COMPANY • AIR REDUCTION MAGNOLIA COMPANY
AIR REDUCTION PACIFIC COMPANY
REPRESENTED INTERNATIONALLY BY AIRCO COMPANY INTERNATIONAL
Divisions of Air Reduction Company, Incorporated
Offices in Principal Cities

THE MILWAUKEE ROAD uses Airco Flame cutting and Arc Welding

To keep its car building and modernization program moving at top speed, the Milwaukee Road makes extensive use of the most modern tools, methods and techniques. That's why oxyacetylene flame cutting and electric arc welding have such an important place in their shops. They've found flame-cut, arc-welded cars simplify design, reduce dead weight, have increased capacity . . . are faster to build.

Flame cutting provides a quick, economical means of shaping a single unit, or hundreds, into any desired contour. Smooth, close-tolerance cuts are routine. Arc welding joins these accurately-cut shapes into a single homogeneous structure. Fabrication costs tumble . . . design simplicity eliminates lap joints . . . corrosion areas removed . . . unloading problems reduced. And, such fabrication permits purchase of steel shapes to the most economical mill size, then flame-cutting them to proper dimension with the oxyacetylene flame.

But, the car shops are not the only users of these modern "tools". For all its operations, the Milwaukee Road utilizes the time and cost-saving flame and arc processes to do more jobs, faster and at lower cost.

Why not investigate how these Airco processes can effect savings for your road? An experienced Airco Railroad Representative stands ready to supply you with all the details. Just write him at your nearest Airco office.

Save two ways...with this TWO-STEP SYSTEM



1. Clean and prime with S-W KROMIK for better, 4-PIGMENT protection

Metal structures in railway service need the time-proved four-pigment protection of KROMIK—the primer that combines the protective properties of red lead with three other protective agents for far tougher, longer-lasting service. Zinc chromate inhibits corrosion . . . zinc oxide adds strength and hardness to the film . . . red lead fortifies the water and corrosion resistance . . . iron oxide adds protection against sunlight and greater covering power.

2. Finish with long-lasting S-W METALASTIC

Finish coats for bridges and metal structures must dry quickly to prevent damage from rain, yet provide a film tough and elastic enough to withstand extremes of temperature and moisture.

METALASTIC provides the water-shedding properties of carbon and graphite . . . dries quickly even in cold or moist weather . . . produces a highly elastic, long-lasting, abrasion-resisting film ideal for railway application. Supplied in black, colors and aluminum.

Here's a maintenance-of-way program that can save costs two ways . . . in better protection for structures that are getting constantly costlier to replace . . . in reducing need for frequent repainting! Get full details on these and other finishes in the complete Sherwin-Williams line for railway service. Write The Sherwin-Williams Co., Transportation Division, Cleveland 1, Ohio.



SHERWIN-WILLIAMS

RAILWAY FINISHES

The Economy of AMCRECO LOWRY in the tie renewal



THE PROOF is this chart of tie renewals in the past forty years for the LEHIGH VALLEY RAILROAD.

FROM 1915 on, annual cross tie renewals on the Lehigh Valley Railroad dropped from nearly 300 per track mile down to an average of approximately 80 for the years from 1922 to 1950!

This outstanding reduction in cross tie renewals was made in the face of the prevailing trend of much heavier loads,

heavier traffic and higher speeds in these later years.

This record was made possible by one thing only: Amcreco preservative treatment of all cross ties. It is an example of the continuous effort on the part of American Railroads to effect operating economies and to contribute toward forest conservation.

CROSS TIES

AMCRECO CREOSOTED PRODUCTS

PILLS

BRIDGE TIES

Pressure Treated by the Lowry Process
for strength that lasts!

TIMBERS

PROCESS TREATMENT is proved again records of the Lehigh Valley Railroad

MORE PROOF is this test
crib which has been ex-
posed to the weather for
over thirty-nine years.

- These four ties
were not treated
- The balance
of these ties
were treated by
the AMCRECO
LOWRY PROCESS

The Amcreco Lowry Process Creosoted Cross Ties shown in the recent photograph at the right were taken from the first charge of ties treated for the New York Central Railroad and cribbed together in 1911 at the Amcreco plant in Rome, N. Y. Four untreated heart longleaf pine ties—then considered to be the longest lived ties available—were laid on top as indicated by the checks. The treated ties are still in perfect condition; the untreated ties failed long ago.

HEAVIER loads, greater traffic and higher speeds make the cost-cutting advantages of Amcreco Lowry Process Treatment more vital than ever before. Take the case the Lehigh Valley Railroad outlined on the opposite page and consider what the reduction in tie renewals means in the light of today's economic conditions. The record of the



Lehigh Valley is not the exception, but is typical of records compiled by users of Amcreco Treatment.

The experience and facilities of the Amcreco organization are available to help all railroads secure maximum reduction in cross tie and timber replacements. Your inquiries are solicited.

AMERICAN CREOSOTING COMPANY



COLONIAL
CREOSOTING
COMPANY
INCORPORATED

GEORGIA
CREOSOTING
COMPANY
INCORPORATED



With Skilled Workers Short can you afford
this high unnecessary Loss?*

**Eye Accidents Cost
\$160,000,000
in Lost Man-Hours****

In the effort to maintain and increase production, some sections have resorted to community-wide pooling of skilled labor and machine tools . . . a praise-worthy move. But DON'T FORGET THE OPPORTUNITY OFFERED TO PREVENT LOSSES AND BOOST PRODUCTION BY PREVENTING INDUSTRIAL EYE ACCIDENTS AND THEIR HIGH COSTS!

An AO Eye Protection program can prevent 98% of all

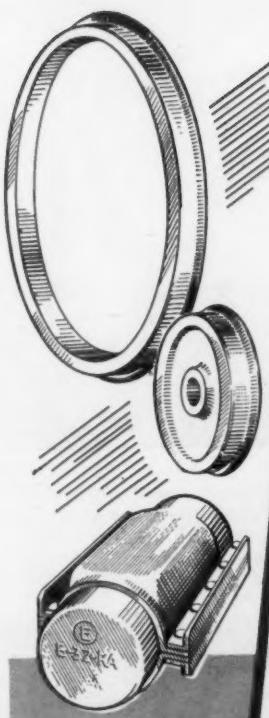
eye accidents . . . keep valued workers on the job . . . save (as it has for many companies) thousands of dollars annually — AND PAY FOR ITS MODEST COST IN SIX MONTHS TIME OR LESS. Ask your AO Safety Representative for complete facts and figures.



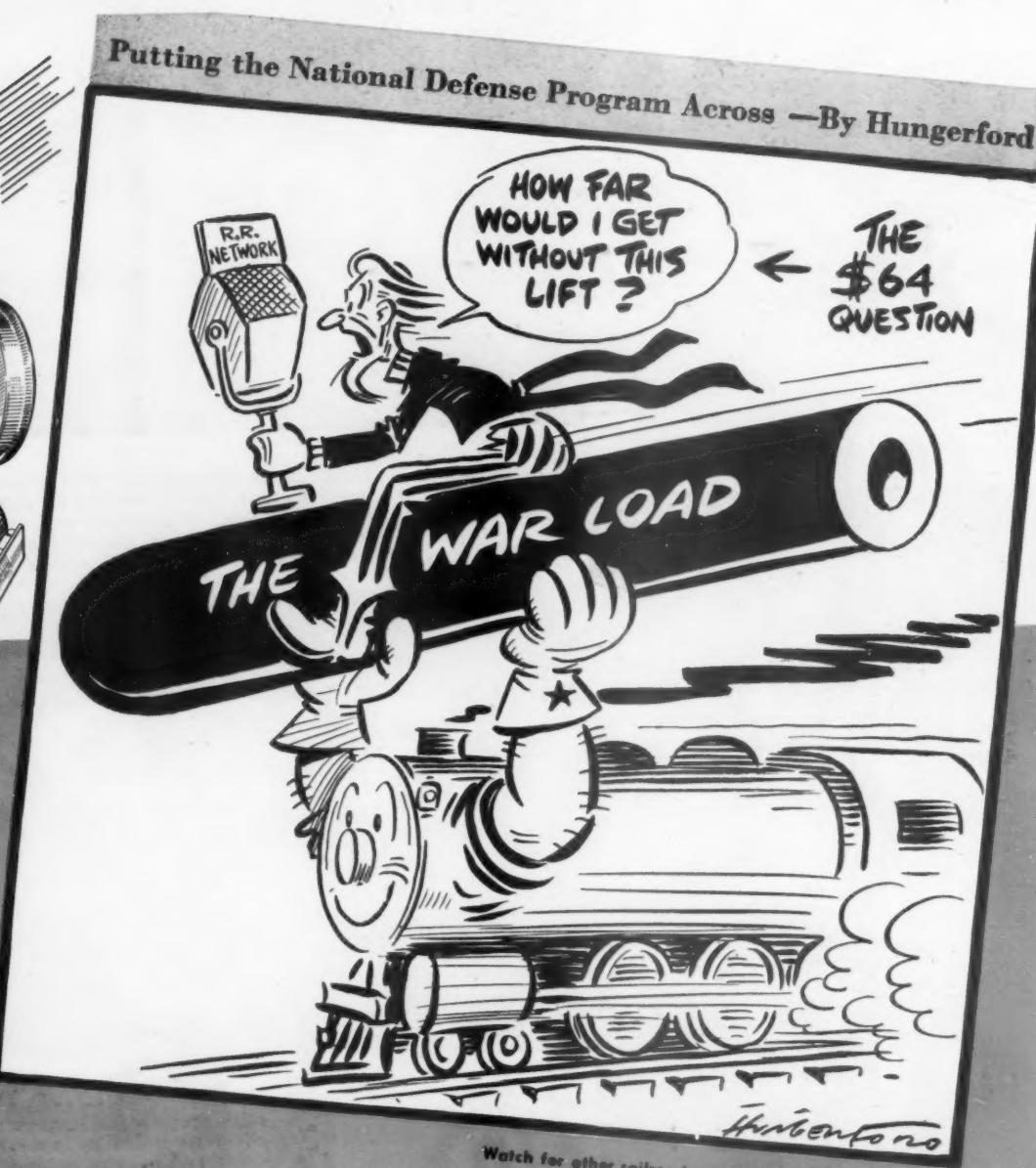
*Bureau of Census reports only 3.7% of the labor force not at work Sept. 1950.
**ESTIMATE. Does not include average cost of compensation which even for the low cost year of 1938 was \$328.

American Optical
COMPANY
SAFETY PRODUCTS DIVISION

SOUTHBRIIDGE, MASSACHUSETTS • BRANCHES IN PRINCIPAL CITIES



We will be glad to send you enlarged copies of this Hungerford cartoon (without advertising copy) for posting on your office and shop bulletin boards, or a cut for your company magazine, at cost.



Watch for other railroad cartoons by Mr. Hungerford

Edgewater Steel Company

P.O. Box 478
Pittsburgh 30, Pa.

Serving America's Railroads with . . .

ROLLED STEEL TIRES
ROLLED STEEL WHEELS
DRAFT GEARS

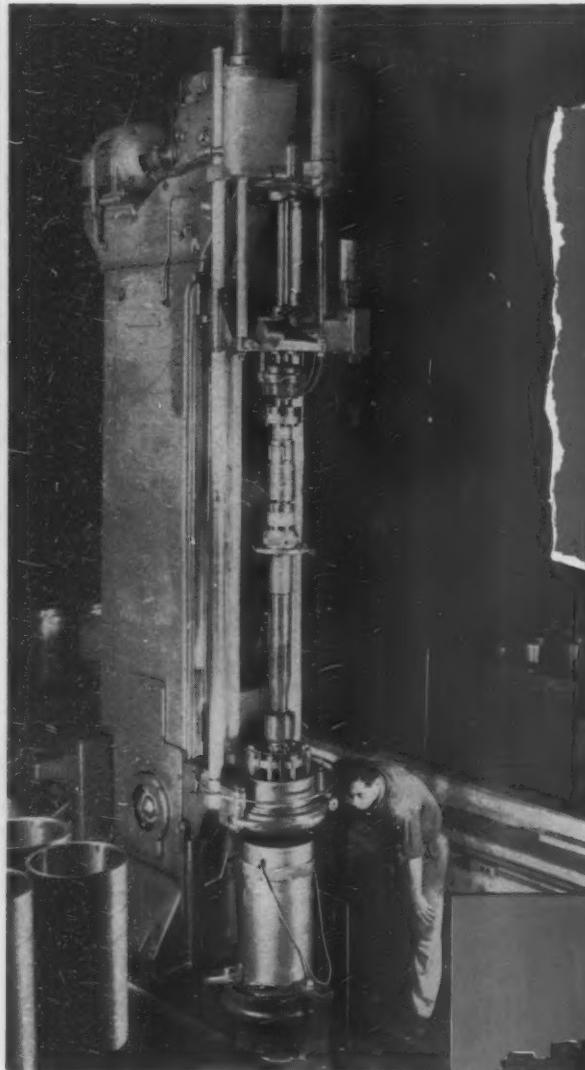




To safeguard precision, every piston ring gets a precision-check on gap clearance and concentricity.



Elaborate special equipment implements the emphasis on perfection. This Crankshaft Balancer is electronically controlled. It balances crankshafts to a maximum of 2" lbs., both statically and dynamically. Every Baldwin crankshaft must pass this test.



(Above) A mirror finish goes on Baldwin cylinder liners in this honing machine.



(Right) This multiple spindle machine assures accurately located holes in pistons.

BALDWIN

have **QUALITY** that comes

High pressure fuel lines get an extra margin of service and safety in this Induction Hardening and Brazing machine. Complete uniformity in every joint is a first requirement. This modern method provides it.



BALDWIN



Threads are rolled, on this machine, on all bolts and studs subjected to high stress. Thread rolling assures higher accuracy, greater strength, and more uniform quality than is obtainable by any other known method.

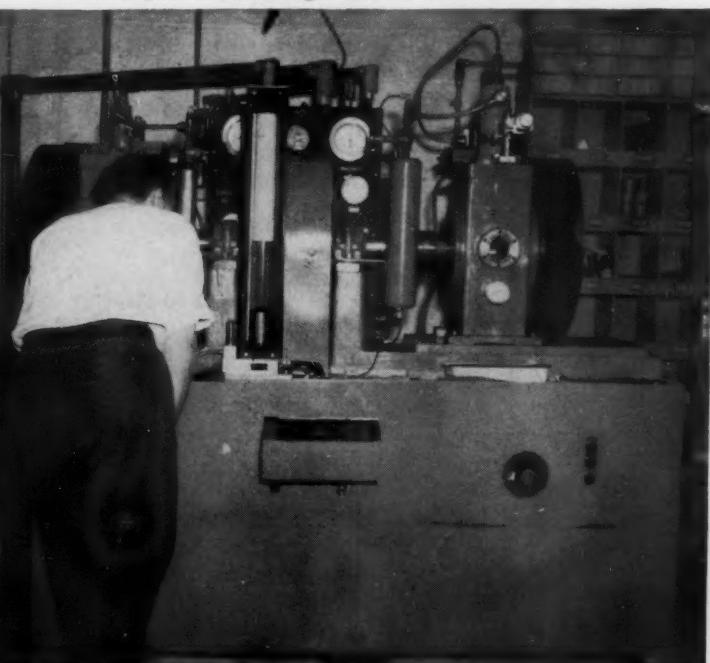


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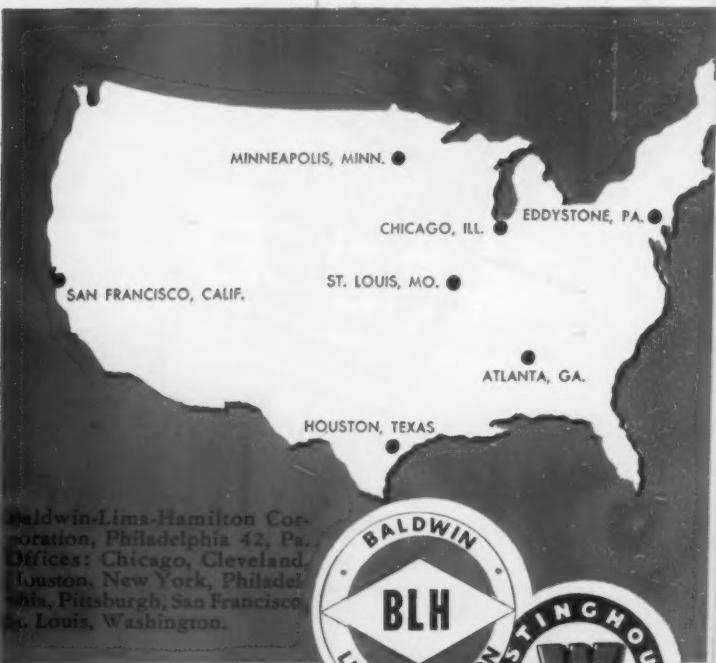
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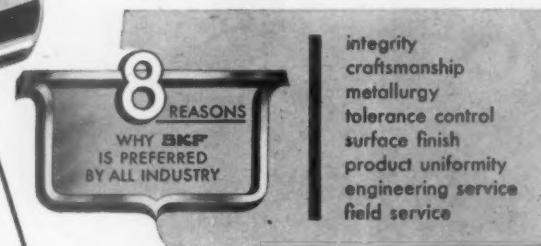
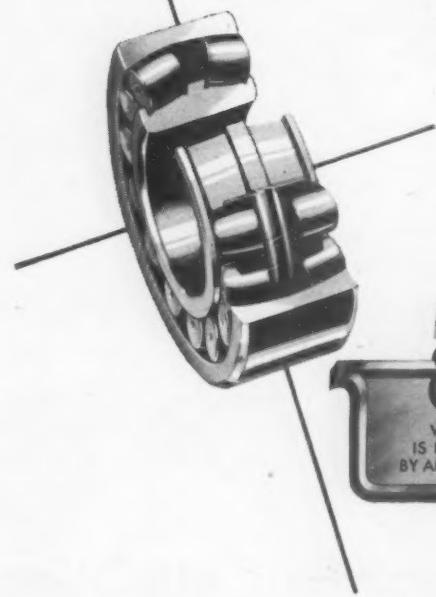
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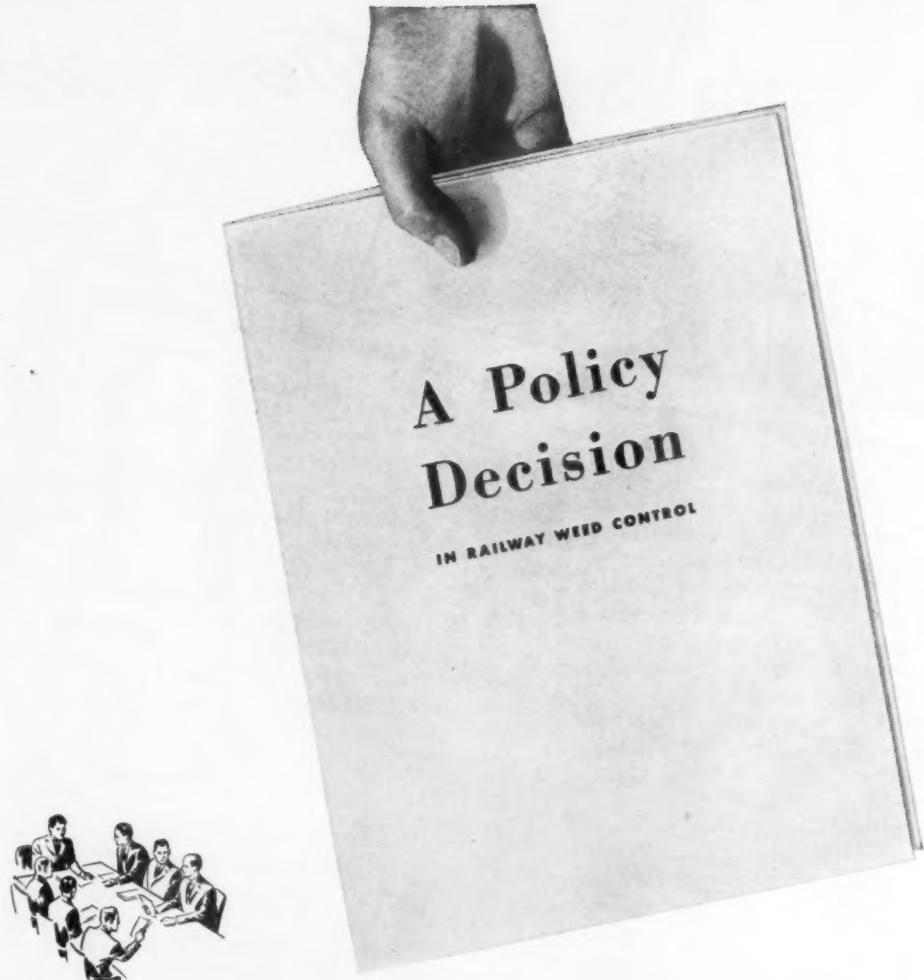
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Partial Bibliography — Engineering and Maintenance Articles

1930 Issue	Page	1930 Issue	Page
*How Property Improvements Reduce Costs	Jan. 7, 162	*Collaboration Needed in Freighthouse Design (Editorial)	June 3, 1066
*More Mechanization for Maintenance Forces	Jan. 7, 172	*What Station to Mechanize?	June 3, 1070
*Construction Volume Continues High	Jan. 7, 244	*Trends in Freighthouse Design	June 3, 1076
*More Mileage Abandoned in 1949	Jan. 7, 258	*Modern Motif is Feature of New Station	June 10, 1130
*Terminal Improvements Pay Their Way	Jan. 14, 134	Cars Through Illinois Central Yards	
*Burlington Introduces Electric Snow Plow	Jan. 14, 138	Classification Station - Modernization	
B. & O. to Spend \$5,000,000 for New Import Ore Pier	Jan. 14, 159	A Systematic Plan	June 17, 1181
Southern to Modernize John Sevier Yard at \$3,000,000 Cost	Jan. 21, 170	A Freighthouse Can Please the Eye	July 1, 1234
Relocated Line Cuts Through a Mountain	Jan. 28, 228	Central of Georgia's Savannah Pleasure Handle a Wide Variety of Export	July 8, 32
New Terminal Speeds Freight Service	Feb. 4, 235	Import Freight	July 8, 17
Reduces Cost of Yard-Cleaning Costs (Editorial)	Feb. 4, 262	*These Changing Times (Editorial)	July 8, 32
*Sask. Dismantling a Large Bridge the Easy Way	Feb. 4, 276	*Frisco's Largest Improvement Project	July 15, 23
Record Exhibit Assured During September Contention	Feb. 11, 301	*Photogrammetry Aids Line Location	
*Chicago Roads Repeat "No" to South Side Union Station Plans to Reflective Material	Feb. 18, 333	Busy Double-Track Line Siding	July 22, 31
Railroads Find New Uses for Reflective Automatic Foam Blanket for Fire Protection	Feb. 25, 350	Large Freight Yard Built at Houston	July 22, 31
New Type Coal Pier Speeds Tidewater Coal Loading	Mar. 4, 401	Diesel Shop Exhibits New Design Features	July 29, 25
*Overhead Conveyor Speeds B. & M. Freighthouse Operations	Mar. 4, 430	*Freighthouse Operation Speeded with Under-Floor Chain Conveyor	Aug. 5, 31
*1,500-hp. Rotary now Plows Feet Within Limits of Joint Bars	Mar. 4, 441	New "Saucer" Yard Improves Operations	Aug. 5, 33
*Sound Testing Searches Out Rail Defects	Mar. 11, 460	Too Much Emphasis on Initial Cost	Aug. 12, 21
*Railway Engineers—Where From in the Future? (Editorial)	Mar. 11, 478	*Canadian Pacific Tunnel Builds \$12 Million Water Treatment for Steam Generator	Aug. 12, 28
*Special Features Add Zest to A.R.E.A. Program	Mar. 11, 480	Stationary Compressors	Aug. 19, 2
New and Improved Manufacturers (18 pages) Heavy Steel Banding Products of the Good Light Repair Tracks and Handling	Mar. 11, 509	*1949 Railroad Storehouse Fits New Haven's Needs	Aug. 26, 35
*Studies Show Economies of Heavier Ball Sections (Editorial)	Mar. 18, 532	*Service Stations for Smaller Terminals	Sept. 2, 52
*Abstracts of A.R.E.A. Committee Reports and Technical Addresses (13 pages)	Mar. 18, 533	How to Make Successful Supervisors	Sept. 9, 51
*St. Louis Shippers to Get New Freight Facility	Mar. 18, 546	Diesels Repaired in Transverse Shop	Sept. 9, 62
*Robot Firemen Guards Oil Tanks	Mar. 25, 602	Sand Plant Supplies Two Servicing Layouts	Sept. 16, 54
Machines Slash Yard Cleaning Costs	Apr. 1, 644	A Railroad Office Building of Advanced Design	Sept. 23, 30
*Rotary Snow Plows of Unique Design	Apr. 8, 684	*Roadmasters' Convention Weighs New Methods and Responsibilities	Sept. 30, 35
*Reefer Icing Yields to Machine Power	Apr. 15, 732	B. & B. Men Get New Ideas About Practical Problems	Oct. 7, 67
*Six Years of Vapor-Dried Ties Progress	Apr. 22, 793	*Great Northern Builds Rotary Snow Plow	Oct. 14, 27
*Southern Completes Large Lift Bridge	Apr. 29, 826	A Diesel Shop to Fit a Short Line's Needs	Oct. 14, 28
*Timber Treatment Benefits and	May 6, 876	Improvements in Ballast Cleaner	Oct. 14, 35
Progress	May 13, 904	*New Flat Yard Replaces Two Others with Equipment	Oct. 21, 16
*Enlarges Yard to Handle More Coal	May 13, 927	Toledo's New Central Union Set Pace for Terminal Operations	Oct. 28, 156
A.R.E.A. Amends Voting on Constitutional Big Track Machines Combat High Costs	May 20, 992	*Chief Engineers Set Pace for Progress	Nov. 4, 67
*B. & O. Completes Bridge Replacement, Line Change	May 27, 1030	*Large N. & W. Bore Gives Lift to Tunnels Clean Two Yard Tracks a Day	Nov. 11, 76
*Car Retarders Facilitate Southern Pacific Operations at Los Angeles	May 27, 1036	Cars By-Passed to Speed Oversize Platforms	Nov. 18, 46
*Huey Long Bridge Gets Aluminum Deck		*Bridge Expedites Freight Between River	Nov. 25, 35
*Chicago's Bombs Attacks Railroads Prepare for "A" Miles		*New High Bridge Over Cumberland Terminal Being Shifted Four Miles	Dec. 2, 46
*Miami Bomb Terminal			Dec. 16, 44
			Dec. 23, 16
			Dec. 28, 20
			Dec. 30, 22

* Feature Articles

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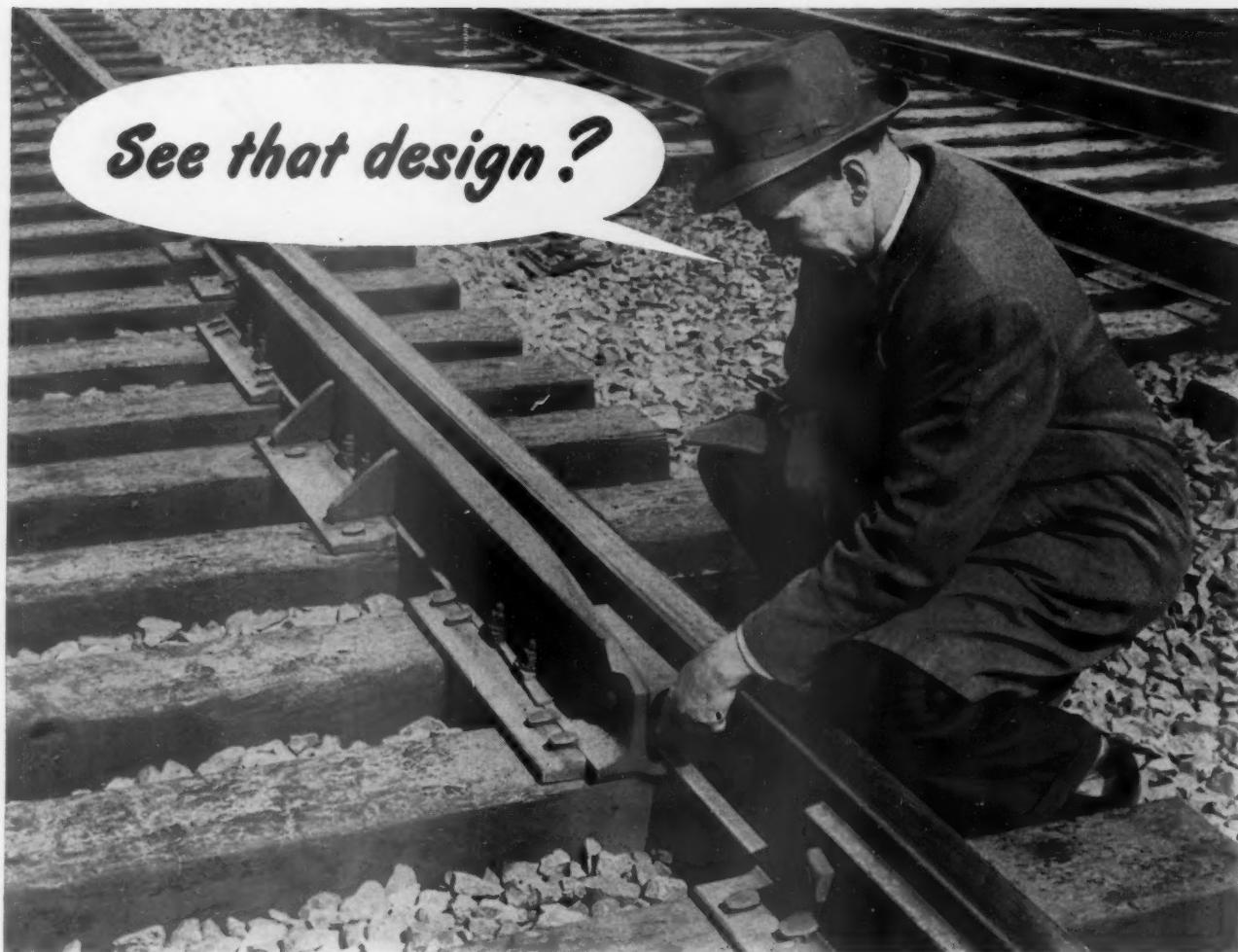


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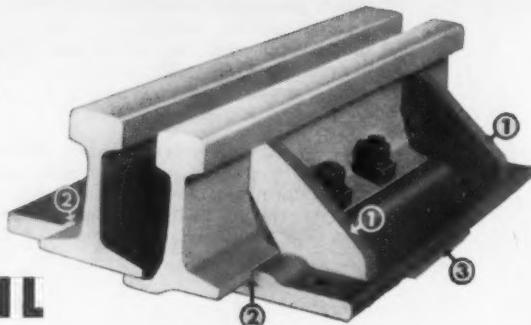
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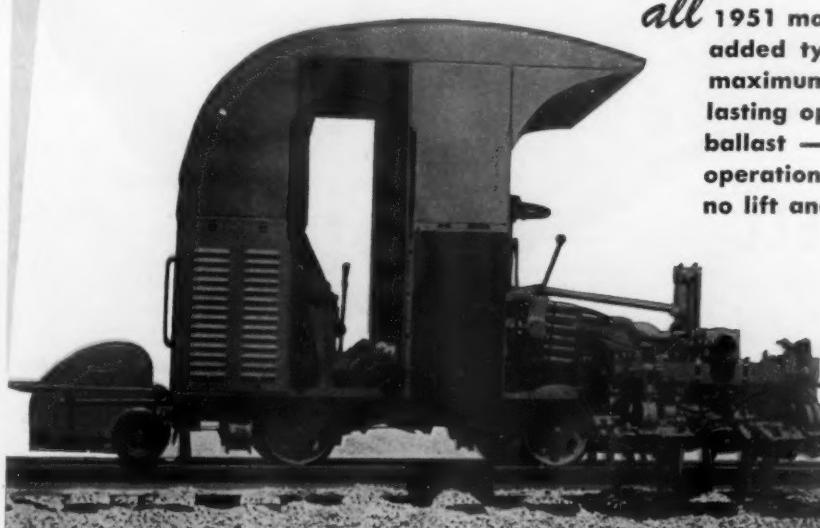
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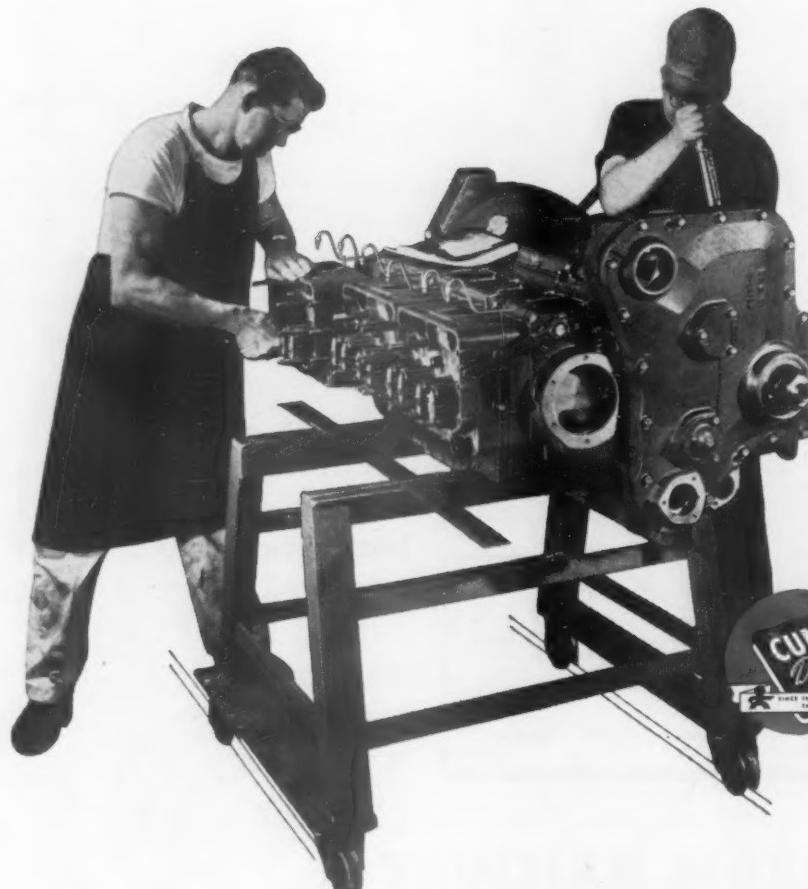


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Always an operating hazard—and a constant drain on the maintenance budget—rust is a doubly dangerous enemy now when it is difficult to obtain metal replacements.

RUST-OLEUM stops rust effectively—is the practical answer to many railroad rust problems. Its tough, pliable, rust-resisting film gives excellent protection to bridges, rolling stock, metal buildings, signal equipment, tanks and many other rustable metal surfaces.

CUT YOUR MAINTENANCE COSTS

RUST-OLEUM cuts maintenance costs in two ways. (1) It prevents rust on new rustable metal surfaces so that costly replacements can be deferred longer than previously could be expected. (2) Because RUST-OLEUM can be applied even over metal already rusted—usually without sandblasting or the use of chemical rust removers—it saves many, many man hours. Write for your copy of the NEW RUST-OLEUM Railroad Catalog.

RUST-OLEUM CORPORATION
2584 Oakton Street, Evanston, Illinois

"Rigid economy, Mon!"

RUST-OLEUM
Rust Preventer
R-769
Damp-Proof Red Primer (SO)

Available
in colors,
and aluminum



THE "400" FLEET

CHICAGO AND NORTHWESTERN RAILWAY SYSTEM

Diesel locomotives on the famous "400" fleet use . . .

- Famous as the first long distance mile-a-minute trains, Chicago and North Western Railway System's "400" streamliners connect Chicago and points in Minnesota, Wisconsin, South Dakota and upper Michigan with fast, modern passenger service.

The pace-making schedules maintained by the "400" trains have called for efficient Diesel locomotive operation. To this efficiency STANDARD HD Diesel Oil has contributed clean, effective lubrication. Each of eleven Diesel units on the "400" fleet have completed over 600,000 miles of trouble-free operation on STANDARD HD.

The Chicago and North Western Railway System is one of the more than 60 Railroads that now use STANDARD HD Diesel Oil. This acceptance indicates the ability of STANDARD HD to pro-



vide efficient and economical lubrication for all types of Diesel locomotives. Make that your basis for investigating STANDARD HD Diesel Oil.

Standard Oil Company (Indiana), 910 South Michigan Avenue, Chicago 80, Illinois.

STANDARD OIL COMPANY (INDIANA)



MET-L-WOOD

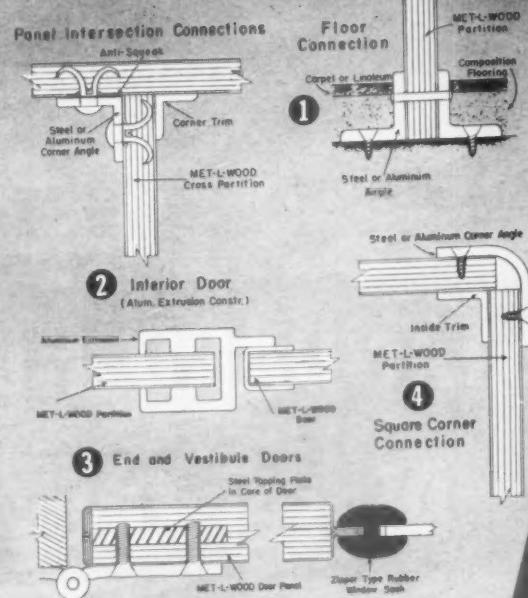
METAL BONDED TO PLYWOOD

VERSATILITY

FOR MODERN CAR INTERIORS



Met-L-Wood walls provide a smooth, luxurious finish in addition to saving weight and simplifying construction.



MET-L-WOOD passenger car partitions, doors and paneling not only produce beautiful finished surfaces, but can also save up to 73%* in weight and a substantial amount of construction time. Shown at left, and described below are typical Met-L-Wood construction details. Full information on Met-L-Wood versatility in new or rebuilt cars will be furnished promptly on request. Write today.

1 Panel intersections with Met-L-Wood can be made invisible from outside with the use of split rivets. Floor connections may be made in a variety of ways, one of which is shown here, using through-rivets and metal screws.

2 Interior doors of Met-L-Wood can be fitted with aluminum extrusion door stops; or the Met-L-Wood partition formed so that the door stop is an integral part of the panel.

3 Steel tapping plate inserts can be put in Met-L-Wood doors at proper places for solidly anchoring hinges and door-opening devices. Note simplicity of using zipper-type window sash with pre-formed Met-L-Wood window openings.

4 Square or rounded corners are made with Met-L-Wood panels and steel or aluminum corner forms. Corner forms can also be fastened with split rivets or through-rivets, as well as with wood or metal screws.

*Met-L-Wood panels $\frac{3}{8}$ " thick, with steel both sides, have a stiffness factor exceeding that of $\frac{1}{4}$ " solid steel plate, while weighing only 27% as much as steel!

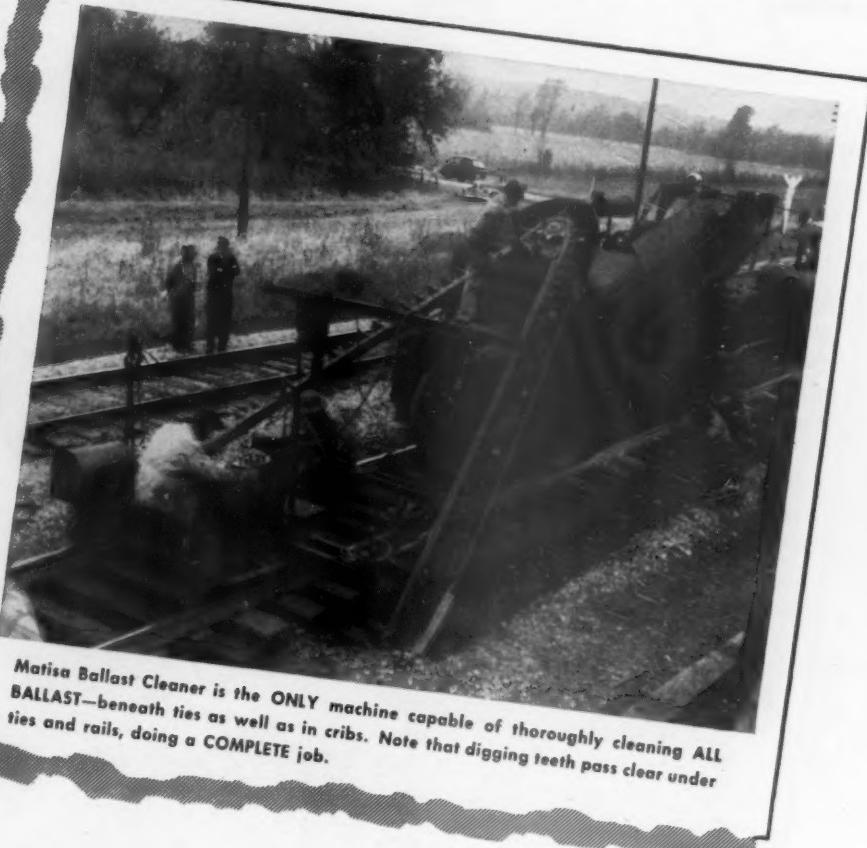
MET-L-WOOD CORPORATION

6755 West 65th Street, Chicago 38, Illinois

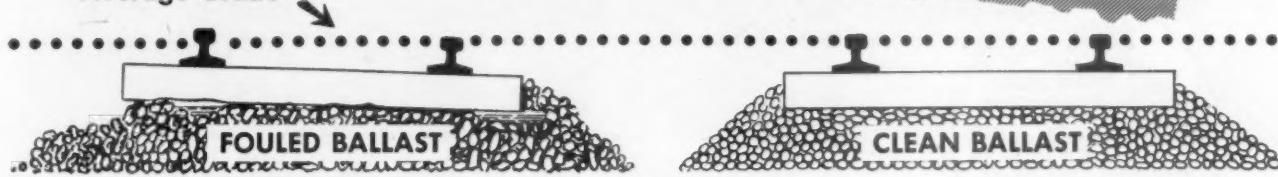
MET-L-WOOD • STRONG... LIGHT... Smooth Finish... Sound Deadening... Fire-Resisting... Insulating

Hold Grade Levels

Yet put up
to 18" of
**CLEAN
BALLAST
UNDER
TIES**



Average Grade



BEFORE *Matisa* CLEANING

Whether to hold grade levels on dirty ballast, or provide a clean ballast cushion with a grade raise has long been a major maintenance of way headache. Now, with the Matisa Ballast Cleaner, you can hold the grade level (or *lower* it), yet put as much as eighteen inches of thoroughly cleaned ballast under ties!

Matisa cleaning—and *only* Matisa—solves the common grade problems at crossings, under-

passes and in yards... And used with the Matisa Tamper, produces roadbed that is *better than new-laid track* put down with other ballasting methods.

Matisa Ballast Cleaners are furnished on a supervised rental basis for cleaning 1,000 feet or 1,000 miles of your track... rapidly, efficiently and completely. Write our M. W. Engineering Department for details on 1951 Cleaner availability.

THE MATISA EQUIPMENT CORP.

224 South Michigan Blvd. • Chicago 4, Illinois

ALL OVER THE WORLD *Matisa* TRACKWORK SPECIALISTS



★As Advertised in TIME Magazine, March 12

Comfort IS OUR BUSINESS

You find Heywood-Wakefield seats on America's finest trains for the same reason they are so widely favored for modern theatres and buses. For extra comfort is one of the added values that have been built into Heywood-Wakefield products ever since we began making furniture 125 years ago. And, because we've learned so much about making products comfortable to use and live with, our century and a quarter of manufacturing experience means fully as much to a bride furnishing her first home as to any transportation executive. Both benefit from our sound workmanship with top quality materials—and the determination to make sure every product we turn out can more than hold its own in free competition.



*You Find This Familiar Trademark Wherever America
LIVES • TRAVELS • SEEKS AMUSEMENT • OR GOES TO SCHOOL*



Theatre Chairs of exclusive "Airflo" and "Encore" designs are proving that comfortable seating is a profitable investment for theatre operators.



School Furniture of light weight, sturdy tubular steel assures long, satisfactory service in meeting the needs of America's schools and colleges.



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Railroad Seats like this luxurious "Sleepy Hollow" model are a revenue-building choice on a growing number of leading railroads.



Bus Seats of Heywood-Wakefield scientific design make travel more comfortable on both city service and intercity routes of leading bus companies.



Household Furniture—Old Colony, Modern and all-purpose Ashcraft designs carry on the 125-year-old Heywood-Wakefield tradition of fine styling and sound construction.

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**ARE YOU ON
A MAINTENANCE
MERRY-GO-ROUND?**

Correct Lubrication can help you increase Diesel availability, stretch periods between overhauls, cut maintenance costs.

If your Diesels are in the shop more than they should be, Socony-Vacuum *Correct Lubrication* may well be the answer to your troubles.

As the pioneer in Diesel lubrication, we know that it takes *all three*—operator, builder and oil supplier—to solve the many varied problems of modern railroad Diesel operation. That's why our men conduct laboratory tests and field evaluations—constantly exchange their findings with leading operators and builders. That's why, too, our lubricating oils today contain all the known qualities necessary for top Diesel efficiency!

A program of *Correct Lubrication* brings you all the benefits of this vast experience—these advanced products. Why not start such a program on your road today?



SOCONY-VACUUM
Correct Lubrication

**WORLD'S GREATEST LUBRICATION KNOWLEDGE
AND ENGINEERING SERVICE**

SOCONY-VACUUM OIL COMPANY, INC., RAILROAD DIVISION
26 Broadway, New York 4, N. Y.

HOW TO CLEAN YARDS

THE *Easy Way*



with the NORDBERG "DSL" YARD CLEANER

Here is another Nordberg machine that makes a really tough track maintenance job easier.

The Nordberg DSL Yard Cleaner cleans track faster, better, and at a much lower cost. It cleans right down to the ties—and without damaging them.

The Yard Cleaner is a self-propelled unit with traveling speeds up to 15 mph. It moves on the rails with two in-gathering plows grading the intertrack and feeding material into an impeller. The impeller lifts this material and also that on the ties, cleaning off the web and base of the rail as well. It then deposits the material on two cross conveyors which in turn feed a 21-ft. wasting conveyor for disposal into high side gondolas on an adjacent track, into dump body push trucks or over the bank—as desired.

Having completed the cleaning job, the Nordberg DSL Yard Cleaner is easily removed from the track by a hydraulically-actuated run-off device.

Write for complete details covering this latest time and money-saving Nordberg machine.

Check these features:

- ✓ Exposes rail spikes and tops of all ties without damage.
- ✓ Grades to smooth uniform plane, level with tops of ties.
- ✓ Loads high side gondolas or dump cars on adjacent track, or dump body push trucks coupled to machine.
- ✓ No hand work required after cleaning operation.
- ✓ Track always in operating condition.
- ✓ Material removed is handled only once.

R351

Look to
NORDBERG

... for continually improved TRACK MAINTENANCE MACHINERY
to do a Better, Faster Maintenance Job at Lower Cost

NORDBERG MFG. CO., Milwaukee 7, Wisconsin

Some like it Hot...Some like it Cold but Everybody likes **DIXIE CUPS**

DIXIES FOR SNACK SERVICE

Refreshing snacks en route appeal to all travelers. For light food service...in coach or buffet...an appealing beverage tops off a tasty sandwich treat. For serving hot beverages such as coffee, tea, cocoa, use Hot Drink Dixies...with or without handles. Drinks stay hot and appetizing to the last drop in a Dixie. For cold drinks...water, milk, fruit juices, iced coffee and tea...regular flat-bottom Dixies are available in a variety of sizes to fit the need. And remember...service with Dixies is easier...no dishwashing...less help needed...faster service for more people.

DIXIES FOR WATER SERVICE

Famous Dixies have been known by name to rail travelers for over a quarter century. The familiar Dixie Cup Dispenser at the end of the car is an invitation to refreshment en route...an invitation accepted by millions because they have confidence in the cleanliness of Dixie Cups. For water service use either flat-bottom Dixies or cone-shaped Vortex Cups.

DIXIE CUP COMPANY
Easton, Pa.



"Dixie" and "Vortex" are registered trade marks of the Dixie Cup Company.



COLD DRINK DIXIES
for serving water, milk,
fruit juices,
iced coffee, tea

HOT DRINK DIXIES
with or without handles
for serving coffee, tea,
cocoa

SPECIAL IMPRINTING TO ORDER!

Your insignia, slogan, name or other message can be imprinted to order on all Dixies. Special imprints serve as service reminders to your passengers. Inquire today. Write to Railroad Department.



STANDARD IN RAILROAD SERVICE FOR OVER 30 YEARS

Highly-stressed structural joints hold tighter when bolted, latest tests prove!

You can save substantially by substituting high-strength bolts for rivets in maintenance and erection of railroad bridges, as well as other structures subject to high stress.

As a result of recent tests under the auspices of the Research Council of Riveted and Bolted Structural Joints, E. J. Ruble, Structural Engineer, research staff, A.A.R., made a number of field applications, using high-strength bolts in railway structures. From his findings, he estimates savings of \$160,000 a year if high-strength bolts were used in railroad bridge repair alone . . . or a grand total of \$440,000 a year saved if all field connections were bolted. The tests *prove* that high-strength bolts stay tight longer than rivets in joints subjected to the same vibrational loading.

Ideally suited for highly-stressed structural joints are RB&W quenched and tempered steel bolts . . . heat-treated to assure the best combination of tensile strength, toughness and ductility to meet heavy load conditions.

Address RB&W at Port Chester for a report on "The Effect of Various Fasteners on the Fatigue Strength of a Structural Joint."



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Plants at: Port Chester, N. Y., Coraopolis, Pa., Rock Falls, Ill., Los Angeles, Calif. Additional sales offices at: Philadelphia, Detroit, Chicago, Chattanooga, Dallas, Oakland. Sales agents at: Portland, Seattle

RB&W

THE COMPLETE
QUALITY LINE

106 YEARS MAKING STRONG THE THINGS THAT MAKE AMERICA STRONG

BROWNHOIST

builds better diesel electric locomotive-cranes . . .
only BROWNHOIST gives you all these features

NEW HOIST CLUTCHES. Roller-bearing mounted wide-faced drums. Air-operated cylinder, mounted within the drum itself . . . provides high line pull and easy adjustment.

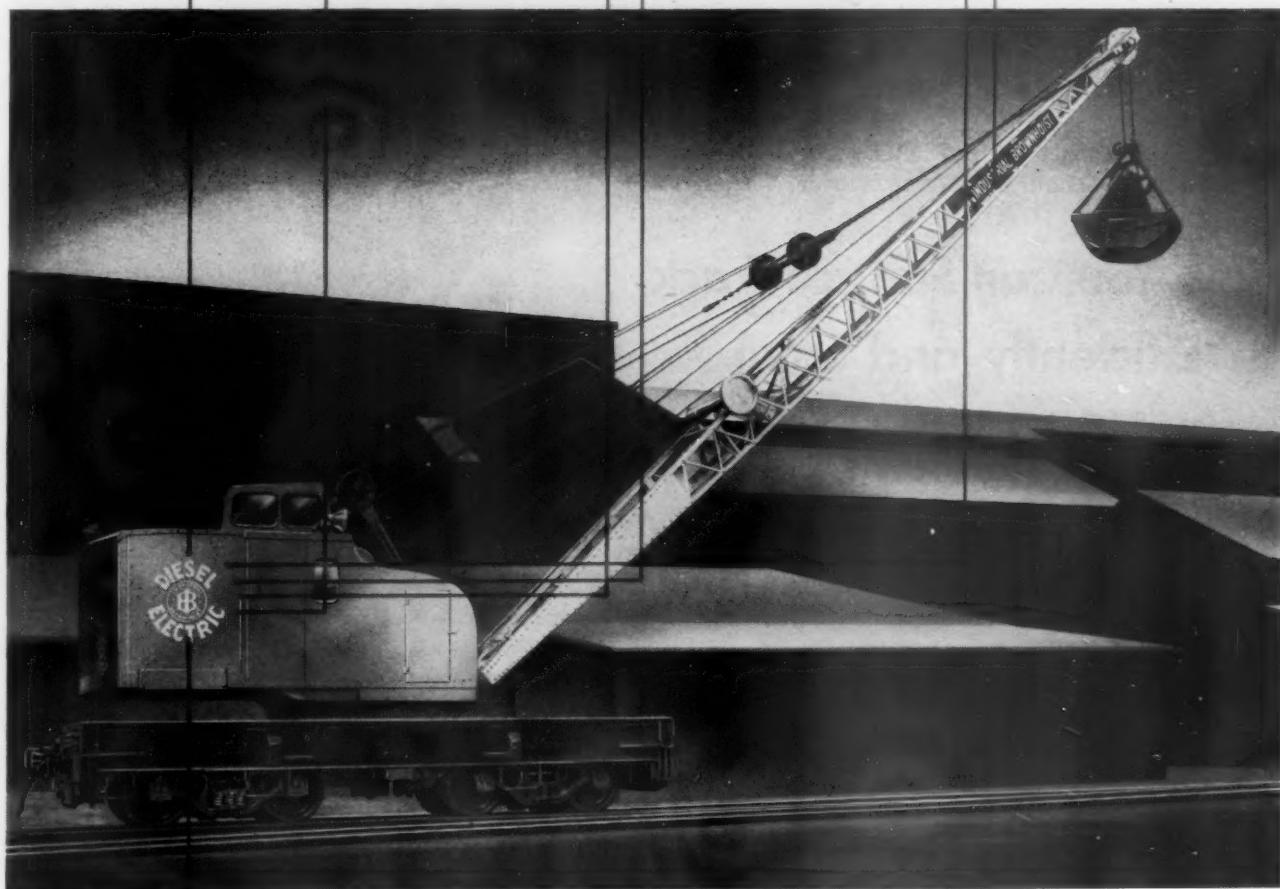
ELECTRIC ROTATION together with electric travel reduces maintenance to a minimum.

NEW FRICTION CLUTCH BOOM HOIST. Safe! Driven by worm and wheel enclosed in oil bath. Twin-barreled, extra large diameter boom-hoist drums in full view of operator. Drums take all line in one layer which eliminates overlapping and fraying of rope.

DYNAMATIC CLUTCH between engine and crane machinery now standard equipment. Gives smooth, sensitive, 32 step control. Banishes slippage. Eliminates torsional impulse and vibration.

NEWLY DESIGNED, EXTRA HEAVY STREAMLINED CAB with controls functionally located for operating efficiency. All machinery guarded against weather, yet readily accessible.

NEW CLEAR-VISION BOOM provides maximum vision for greater working efficiency. This open type boom in conjunction with the Brownhoist patented Monitor-type cab guarantees 360° visibility.

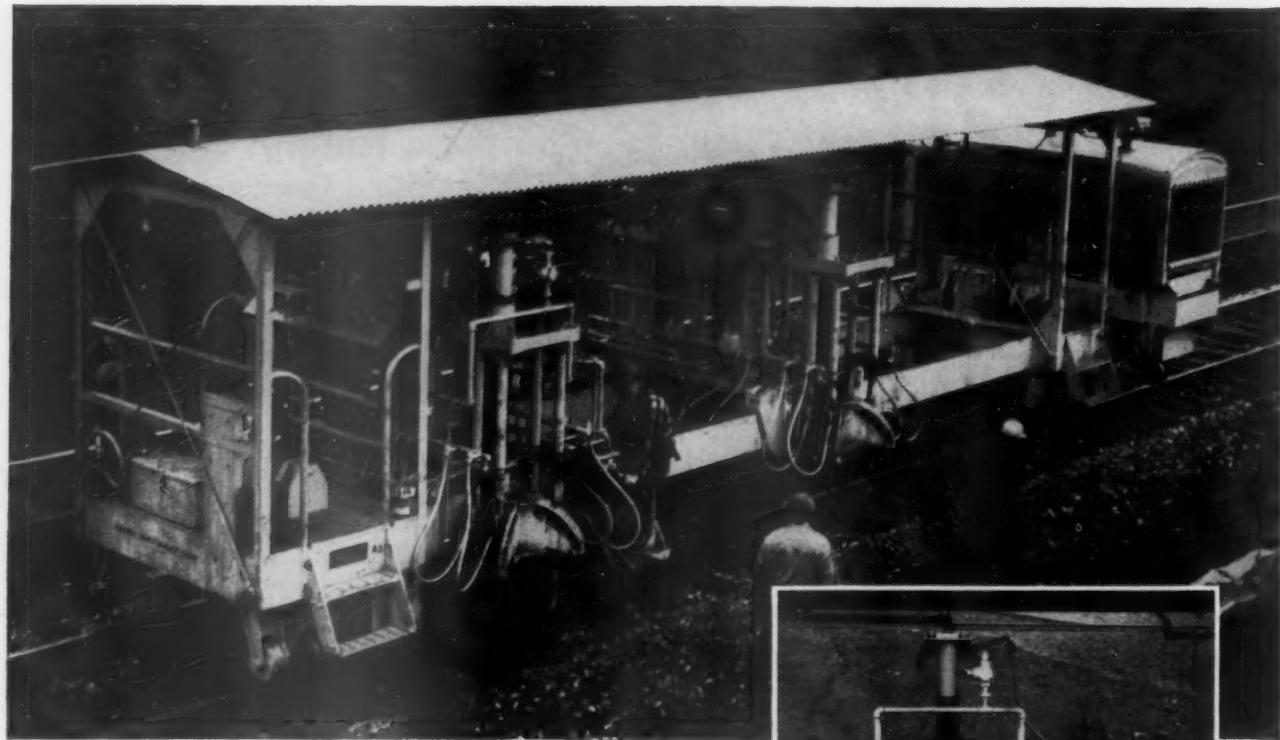


BROWNHOIST

and these optional features—8 wheel chain drive for increased drawbar pull. Twin engine drive for work on extreme grades or where greater tractive effort is required. Timken roller bearing journals for low starting tractive effort. For complete description write to . . .

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INDUSTRIAL BROWNHOIST CORPORATION, BAY CITY, MICHIGAN • DISTRICT OFFICES: New York, Philadelphia, Pittsburgh, Cleveland, San Francisco, Chicago, Canadian Brownhoist Ltd., Montreal, Quebec. AGENCIES: Detroit, Birmingham, Houston, Los Angeles.



HR Track Raising and Air Tamping Machine Working on the Pennsylvania Railroad, Altoona Division, November 1950.

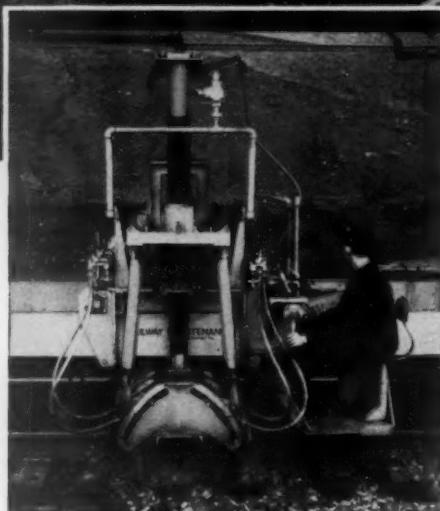
Now You Can Surface Track Efficiently and Save **\$1800 Per Mile**

You can air tamp stone ballasted track with the HR Track Raising and Tamping Machine at a saving of up to \$1800 per mile—over a comparable job with a multiple tool hand operated air tamping outfit. This machine is ideal for spot tamping and can be used for tamping out of face continuous raise with independent jacks.

It is equipped with two carriages, each mounted with 16 air tamping tools arranged in groups of eight centered over each rail, and is instrument controlled for simultaneous or independent opera-

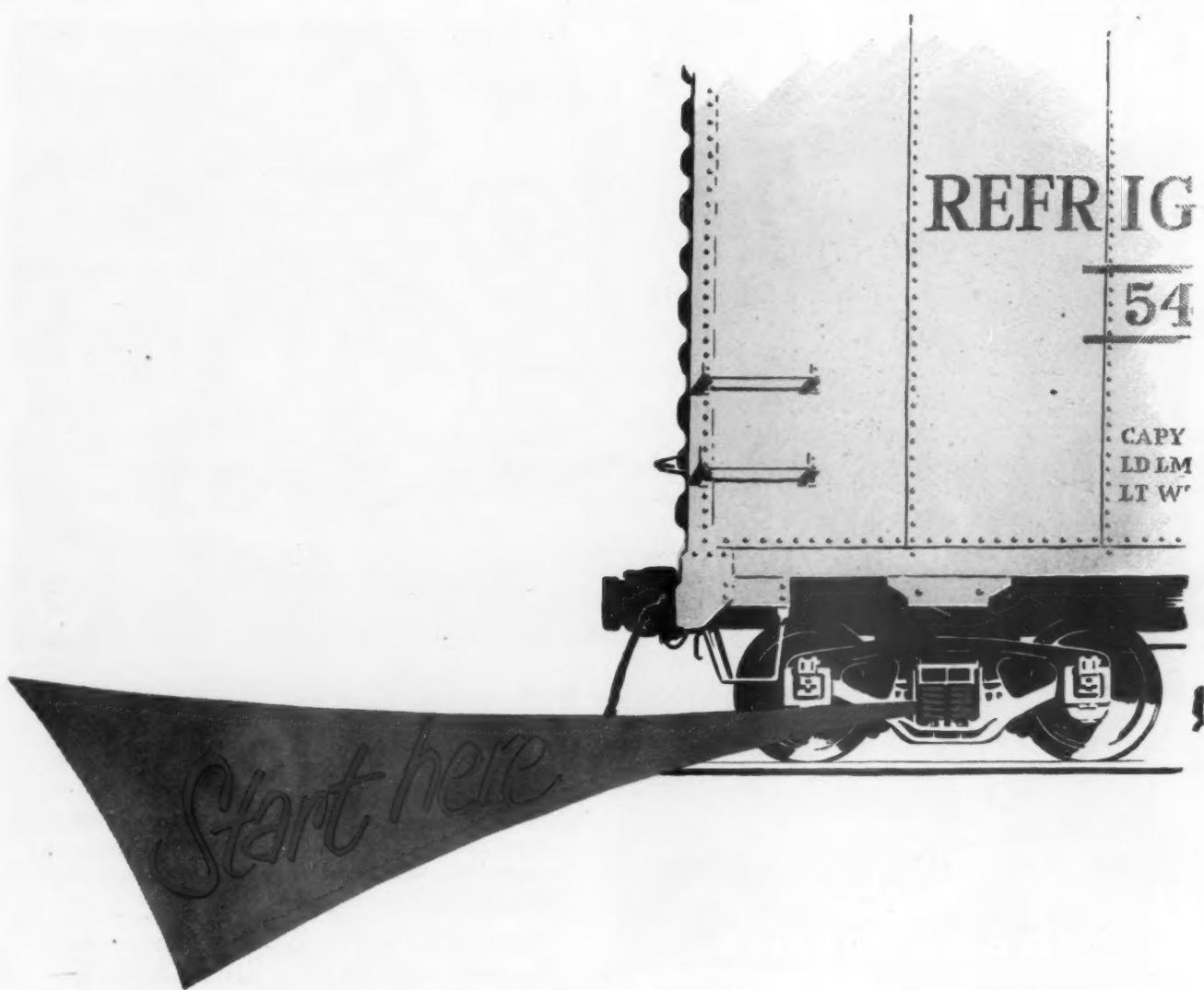
tion on ties. The machine raises the track to pre-determined grade and cross levels. While tamping, it holds from 10 to 12 ties, depending on the spacing.

The Track Raiser is a self-propelled mobile unit, all operations air or hydraulic with a centralized control. Greater savings are possible on tracks ballasted with small stone, gravel or cinders. To learn more about operating economy and specifications write to Railway Maintenance Corporation, P.O. Box 1888, Pittsburgh 30, Pennsylvania.



Railway Maintenance Corporation

Designers and Manufacturers of: Moles; Super Moles; McWilliams Crib Cleaners;  Track Raiser and Air Tamper; McWilliams Multiple Tool Air Tamper; R.M.C. Rail Joint Packing.



to make more profit per carload

The long travel springs of the Railway Steel-Spring Division can be your short-cut to reduced damage claims. These heavy-duty springs help cut costly claims by providing your freight with a smooth, even ride that minimizes lading damage.

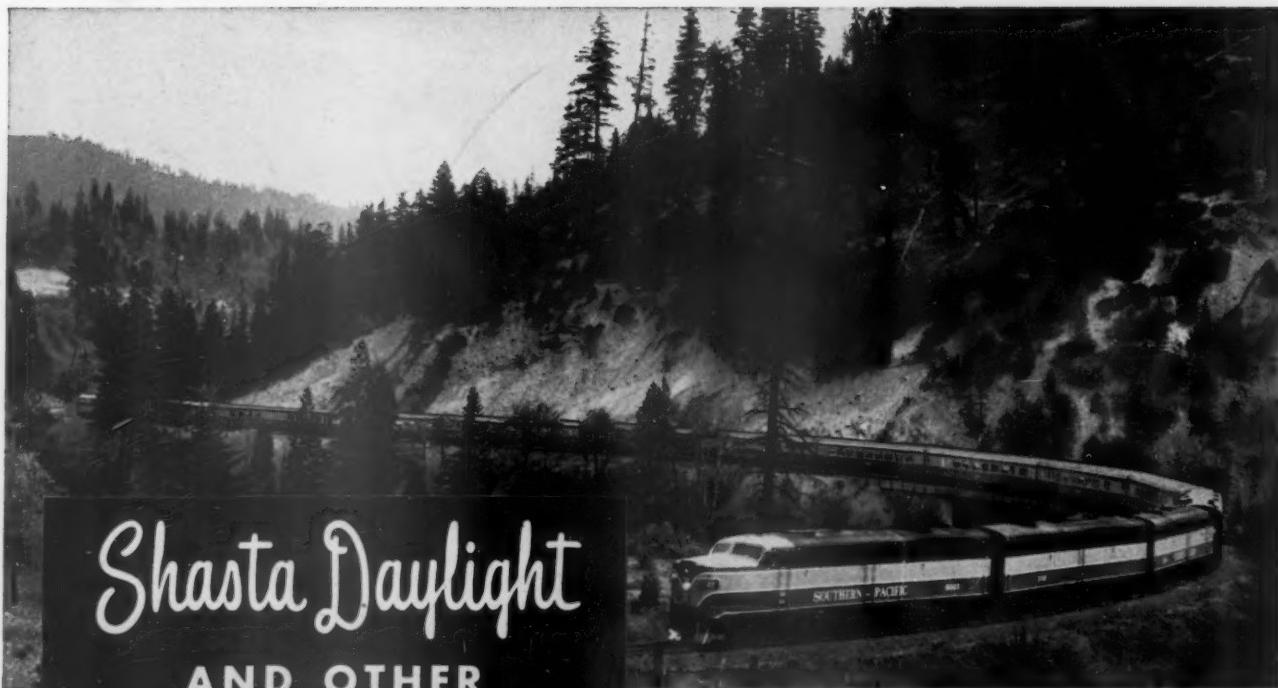
Other benefits include reduced wear on your rolling stock and lower replacement requirements.

To put these advantages to work, specify "Railway" springs. Our many years of experience in the design and manufacture of all types of springs is your guarantee of top performance. Call your Alco sales representative in New York, Cleveland, Chicago, St. Louis, St. Paul, San Francisco.

Railway Steel-Spring Division

AMERICAN LOCOMOTIVE COMPANY





Shasta Daylight

AND OTHER



NAME TRAINS

are equipped with...

WAUKESHA
Propane Powered
ICE ENGINES and
ENGINATORS*

- On every car of its famous name trains of today—the *Shasta Daylight*, the *Larks*, the San Francisco and Los Angeles *Daylights* and other luxury trains—the utmost comfort and complete convenience are assured for Southern Pacific passengers. Because—ever since 1936 Waukesha engine-driven equipment has supplied SP passenger trains with constant, dependable air conditioning and electric energy.

With a single unit for each car, Waukesha Diesel Enginators* supply *all* electric services—entirely independent of locomotive itself, train movement, car location, or terminal standby. Always 100 per cent available—anytime! anywhere! any weather! Get Bulletin 1496.

*Reg. U.S. Pat. Off.

RAILWAY DIVISION
WAUKESHA MOTOR COMPANY • WAUKESHA, WIS.

*Largest Builders of mobile, engine-driven
Refrigeration and Generator Equipment*

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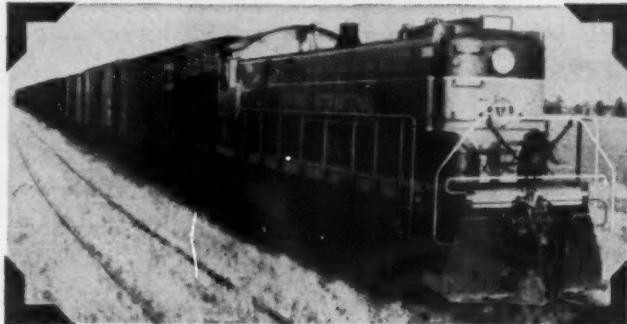
Southern Pacific Daylight under-car installation—Waukesha Enginator*, Ice Engine, and Sub-Cooler

STANDARD ENGINEER'S REPORT

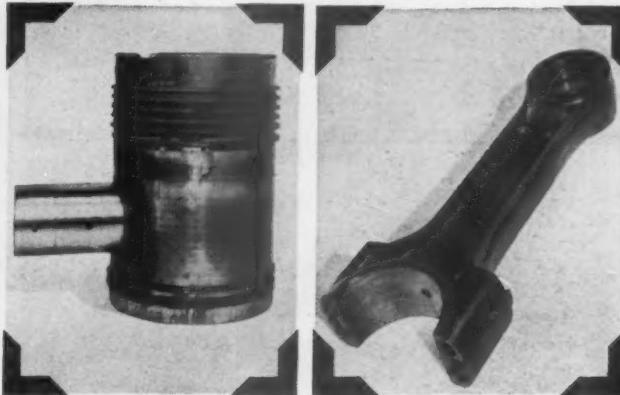
DATA

LUBRICANT	RPM Delo Oil R.R.
UNIT	Alco Diesel - 6 cyl. 12½" x 13" - 1000 H.P.
SERVICE	Mountain haul - Heavy snow, extreme cold
LOCATION	Spokane, Wash.-Yahke, B.C.
FIRM	Spokane International R.R. Co.

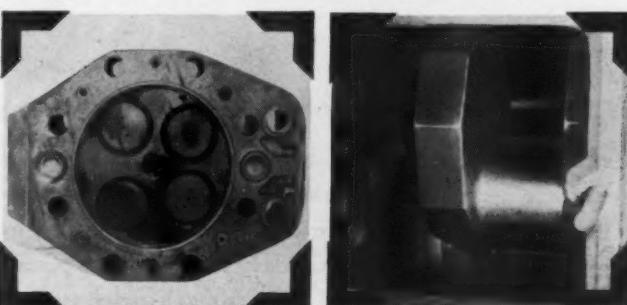
Engines in "perfect condition" after year of toughest service!



LUBRICATED WITH RPM DELO Oil R.R., nine new diesels owned by the Spokane International R.R. Company were kept in regular service for one year. The winter was exceptionally severe and the locomotives bucked heavy snow almost daily. They worked or were idled in temperatures that often for periods of ten days averaged from 20 to 40 degrees below zero.



On inspection at the end of that time there were no accumulations of sludge in oil systems and the engines were in "perfect condition" as pictures of parts from one of them indicate.

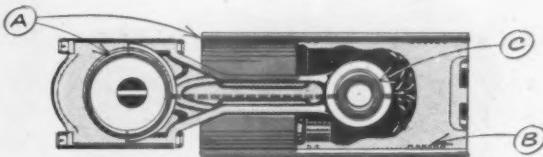


NO CARBON had collected on the cylinder head and all rings were free and functioning properly. Connecting-rod and main bearings and wristpin were within standard tolerance. Measurement of the liner showed less than 0.001 inch wear.

REMARKS: The Spokane International Railroad provides an important connecting service between trans-continental lines through Spokane and the Canadian Pacific to the north. Most of their trackage is in northern Idaho where severe weather and other conditions often make operation difficult. RPM DELO Oil R.R. will meet the toughest weather or operational conditions in all locomotive diesel engines.



How RPM DELO Oil R.R. prevents wear, corrosion, oxidation



- A. Special additive provides metal-adhesion qualities...keeps oil on parts whether hot or cold, running or idle.
- B. Anti-oxidant resists deterioration of oil and formation of lacquer...prevents ring-sticking. Detergent keeps parts clean...helps prevent scuffing of cylinder walls.
- C. Special compounds stop corrosion of bushing or bearing metals and foaming in crankcase.

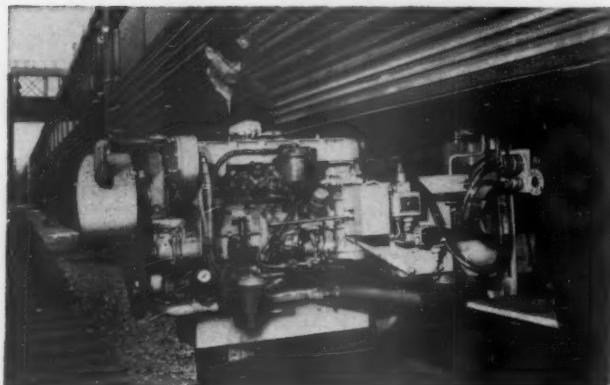
FOR MORE INFORMATION about this or other petroleum products of any kind, or the name of your nearest distributor handling them, write or call any of the companies listed below.

TRADEMARK "RPM DELO" REG. U.S. PAT. OFF

STANDARD OIL COMPANY OF CALIFORNIA • San Francisco
THE CALIFORNIA OIL COMPANY • Barber, N.J., Chicago, New Orleans

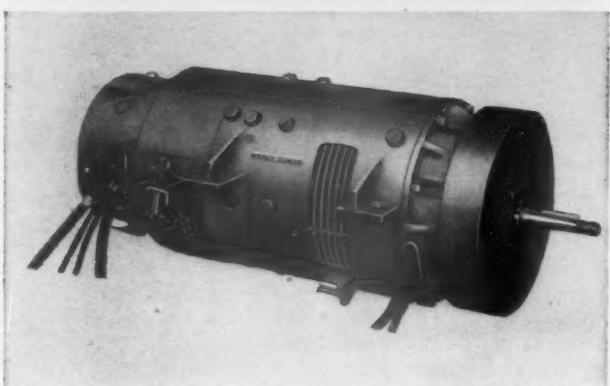
STANDARD OIL COMPANY OF TEXAS • El Paso, Texas
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WHICH UNDERCAR UNIT IS BEST FOR YOU?



● **THE G-E DIESEL-ELECTRIC UNDERCAR POWER PLANT** is a self-contained, a-c power plant. It's "swing out" mounting allows for quick servicing. Independent operation eliminates drag on the locomotive.

Plant consists of a 6-cylinder, 48-hp diesel engine coupled to an a-c generator with a 27-30 kw net output. It produces 220 volts, 60 cycle, 3 phase power.



● **G-E'S AXLE-DRIVEN MOTOR GENERATOR** is a conventional power unit popular with some of the nation's finest railroads. Over 1600 are now in service.

The axle-driven motor generator is a d-c unit assuring ample power for air-conditioning, lighting, water-cooling, and other electrical loads. Adequate reserve power is also provided to keep batteries up during all normal train operations. It is rated for 25, 30, or 35 kw and for operation on 32, 64 and 114-volt systems.



● **THE AMPLIDYNE BOOSTER INVERTER** efficiently converts from d-c to 230 volt, single phase, 60 cycle a-c. It supplies smooth power for fluorescent lights, blower and condenser motors, booster and exhaust fan motors and other devices to increase passenger comfort. Can be used with the axle-driven motor generator or with any other d-c source. Rating is 5 or 6.4 kw for 64 and 114-volt d-c systems. General Electric Company, Schenectady 5, N. Y.

No matter which of these units best suits your cars, you are assured

Economical operation

Dependability

Low maintenance costs

Simplicity of operation

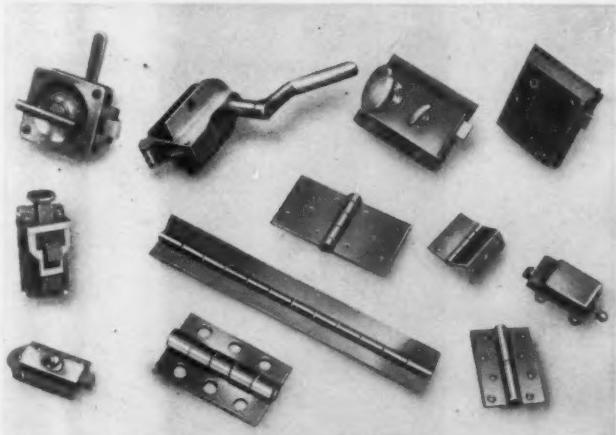
Consult your nearest G-E sales office for further details.

GENERAL  ELECTRIC

122-12

Barnaby

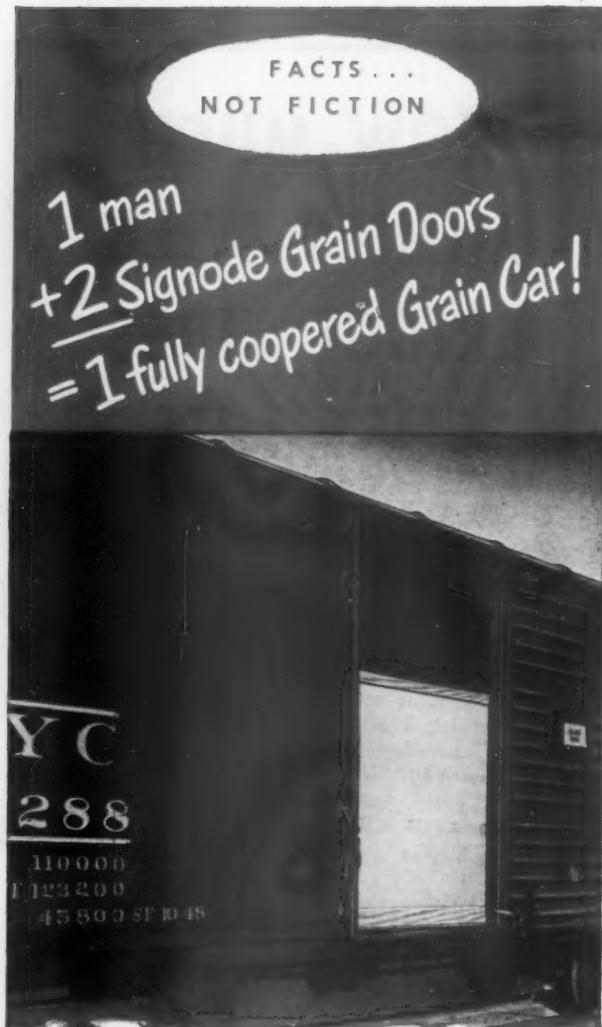
A DEPENDABLE SOURCE



for CAR HARDWARE and Many Replacement Parts

Barnaby—for many years a well-known manufacturer of machine tool accessories and parts—entered the railway equipment field following World War I. Today, with many of the country's leading railroads and car builders as regular customers, almost all of the company's facilities are now devoted to the manufacture of products such as these: White Bronze, Bronze and Cast Iron End and Vestibule Door Locks . . . Hinges . . . Vestibule and Platform Trimmings . . . Wash Stand and Saloon Fittings . . . Sash Fixtures . . . Hooks, Sash Lifts, etc. . . . Baggage Racks (to specifications) . . . Grease Fittings . . . Locomotive and Diesel Engine Replacement Parts (to specifications) . . . Railroad Gauges, To A.A.R. Manual of Standard and Recommended Practice. Here is a company that has proved its ability to produce top quality railroad hardware and other equipment . . . economically and without delivery delay. If you are not already thoroughly familiar with the many products that Barnaby can supply, it can definitely be to your advantage to let us send you full information. If you need obsolete or hard-to-get parts, send us prints or samples for a prompt quotation. And our Engineering Department is always ready to offer full cooperation on any of your parts problems.

Barnaby MANUFACTURING COMPANY, INC.
70 KNOWLTON STREET • BRIDGEPORT 8, CONN.



SIGNODE ONE-PIECE... ONE-MAN GRAIN DOORS

Save grain... manpower... time... money

One door to a doorway—not 6! Two doors to the car—not 12! Lightweight. Easy to apply. Seal positively, using weight of load to do the job. Speed unloading, car cleaning. *Approved by the AAR—Pamphlet No. 36, Revised.*

Signode One-Piece . . . One-Man Grain Doors are made of strong steel strapping, scientifically spaced between water-repellent kraft liner board. Height, 6 feet—weight 14 pounds. For your free copy of Pamphlet No. 36, and full information about Signode One-Piece . . . One-Man Grain Doors, write



SIGNODE
STEEL STRAPPING COMPANY

Railroad Sales Division
2637 N. Western Ave., Chicago 47, Illinois
Offices coast to coast.

HOW MUCH MONEY WILL BRIDGE FIRES COST THIS YEAR?

The answer is something we won't know until December 1st, 1951 . . . but it's a fact recorded by the Fire Protection & Insurance Section of the Association of American Railroads that over a five year period, an average of 291 bridge and trestle fires cost the nation's railroads more than three-quarters of a million dollars annually. This is nearly 8% of the average annual "direct" loss suffered by all railroad property fires.

What can be done about stopping this loss . . . and reducing the loss of time and disruption of schedules caused by bridge fires? Many of America's leading rail systems (names upon request) have answered this all-important question by adopting the LIBBEY-ZONE PROCESS.

Briefly, the LIBBEY-ZONE PROCESS provides for covering the exposed, fire-hungry wooden surfaces with ZONE HEAVY-DUTY asphalt compound to which is applied a layer of gravel aggregate. Exhaustive tests prove this method superior to any other fire resistant method in use today. The cost is low; the materials may be applied quickly by unskilled help; and the upkeep cost is almost nonexistent.

To date, 19 railroads have adopted the LIBBEY-ZONE PROCESS . . . applied on about one-half million lineal feet of bridge decks.

The ZONE COMPANY . . . exclusively offering the LIBBEY-ZONE PROCESS . . . invites your inquiries. An interesting illustrated booklet explains and demonstrates the process in detail. Specific questions and problems are also invited. Write today . . . no obligation, of course.

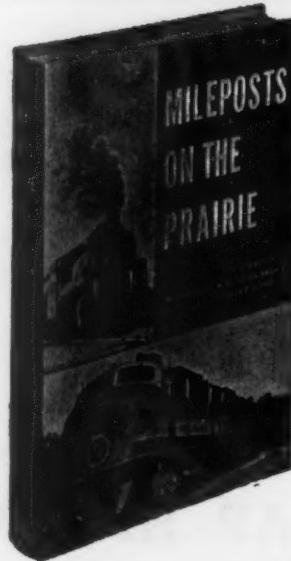
THE LIBBEY-ZONE PROCESS OF BRIDGE FIRE PROTECTION

THE **ZONE** COMPANY
Dept. RA, Box 789, Ft. Worth 1, Texas

The Story of the Minneapolis & St. Louis Railway . . .

MILEPOSTS ON THE PRAIRIE

By Frank P. Donovan, Jr.



For decades railroaders regaled each other with yarns about railroading on "The Louie." Many of them became standard jokes. In recent years, however, a new kind of story—a success story—has prevailed. "The Louie," they say, is now one of the best operated roads in the country.

Frank P. Donovan, Jr., an ex-railroader, in collecting material for this history of the M. & St. L., talked with many of the old timers and obtained original versions of many of the stories about "The Louie." Through extensive research he was able to piece together obscure episodes in its colorful history. How this "sick railroad" was restored to sound economic health by "Doctor" L. C. Sprague, is vividly described.

You will enjoy this lusty story of railroading in the Northwest. Thirty-two pages of authentic photographs help visualize its growth into a fully equipped and modern railroad. *Send for your copy today.*

352 pages, 74 photographs, charts, end-paper maps, bibliography, index, cloth, 5½ x 8½, \$4.50

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"STRAINING AT A GNAT AND SWALLOWING A CAMEL"

President Truman has recommended an increase in rates for second-class mail upon the ground that it costs more to handle newspapers and magazines than the second-class rates received for the service, and that therefore these publications are subsidized. The President at the same time said nothing about withdrawing the many subsidies, so huge in the aggregate, being given to other interests.

The Simmons-Boardman Publishing Corporation, publisher of *Railway Age*, repeatedly has stated in its publications that it wants no subsidies for its products. If it can be demonstrated that second-class mail to urban recipients is being subsidized in its direct cost, then such increased rates as are necessary to withdraw the subsidies should be put into effect.

Where Is the Logic?

Second-class mail was originally established and has always been properly regarded as a "by-product" of post office operations, to be charged for as such—not as a favor to publishers, but as an educational service to the public, the test to establish the general public utility of this service lying in the public's willingness to order and pay for subscriptions to the magazines and newspapers to be accorded this "by-product" status. These papers should pay rates to defray fully the direct costs of their distribution, so as not to constitute any burden whatever on the taxpayers, but they should not be saddled either with departmental "overhead" costs, which would not be saved if second-class service were

eliminated, nor with contributions to the post office department's philanthropies such as franked mail for governmental departments, non-compensatory mail service for rural areas, and free delivery for local newspapers.

But anyhow, where is the logic or sense in all the to-do about minor subsidies which may be received by the subscribers to magazines and newspapers—who include practically the entire population—while no attention whatever is paid to the billions of dollars in subsidies to special-interest political groups—subsidies of such enormous size that they are perverting and undermining the national economy? Never was there afforded a more extreme example of "straining at a gnat and swallowing a camel." All subsidies to economic services and products of whatever kind should be eliminated, but nothing whatever is gained for the national welfare and safety by raising an uproar about unsubstantiated or microscopic handouts, while the whopping big ones are totally ignored.

One of the great paradoxes in the economic policies of our federal and state and local governments is the way in which they levy taxes and the way in which they use them. They are all now, especially the federal government, seeking sources of increased revenues. At the same time they are largely violating the principles of taxing and spending that are recognized by virtually all economists as sound. This is true in many fields, but especially in the field of transportation, as was ably pointed out by George H. Shafer in an article in the February 5 *Railway Age*.

Two principles that will not be questioned by any

economist believing in private enterprise are (1) that taxation should be based on ability to pay and (2) that taxes should be used solely to promote the public welfare—i.e., not expended for the welfare of privileged groups at the expense of the people as a whole. Taxes that violate principle (1) impose unfair burdens on those who are taxed excessively in proportion to their ability to pay. Violation of principle (2) temporarily benefits the privileged few at the expense of the great majority of taxpayers, but it ultimately injures all the people by weakening the economy as a whole. Both violations of principle involve unfair discrimination between citizens who are entitled to equality of treatment by their governments.

When taxes in this country were comparatively lighter, such unfair discriminations—however unsound in principle—did comparatively little harm, as a practical matter. Now that taxes have become such an enormous burden, which is soon to be greatly increased, a continuance of unfair discrimination in taxing and spending becomes an economic influence which contributes to inflation and is perhaps second only to inflation itself in its destructive effects on the national economy.

Alarming Complacency

One of the most alarming facts about the situation is the complacency with which most businessmen regard it and the effrontery with which so many of them seek discriminations in their favor. Of all people, businessmen should be most intelligent and alert about taxes and foremost in opposing unfair discrimination both in levying taxes and in their use. But businessmen do not show these qualities as regards taxation and spending in transportation, and in many other fields. Nobody needs to be told that the railways pay large taxes to the national, state and local governments on their property and their income; and that they receive nothing back in subsidies. As the railways are the only means of general transportation that own *all* the property they use and pay taxes on it, the only way to prevent unfair discrimination against them would be to require other carriers to pay for their use of government-owned property—waterways, highways and airports—on the same basis that users of the railways pay for the service of privately owned property, and taxes on income relatively as large as those paid by the railways.

It is most significant that in seeking sources of taxes our governments—local, state or national—seldom think of substituting compensatory charges for the use of government-owned property in lieu of part of the increased taxes they propose to levy on the general public. It is estimated that direct and indirect subsidies from the federal government to carriers by water, highway and air amount to \$1½ billion a year; and these carriers are the recipients of additional subsidies from state and local governments. What reason can anybody give why it would not be more in the public interest to withdraw these subsidies than to add more than \$1½ billion an-

nually to the income and excise taxes laid upon the general public?

While transportation has been used especially for illustration in this discussion, the issue of unfair discrimination in taxing and spending is not presented in transportation alone. Total direct and indirect government subsidies for all purposes—transportation, support of farm prices, socialized housing and so on ad infinitum—have been authoritatively estimated at \$8 billion to \$10 billion annually, all of which is being borne by the general taxpayer for the benefit of special interests. Who is going to benefit in the long run if such policies end in breaking down the national economy?

Parts of the economy that have to be subsidized—because their customers are unwilling to pay enough to cover all the costs of providing such services or products—have no good economic reason for continued existence at their present magnitude. Their subsidization undermines the national economy both by unnecessarily increasing the total burden of taxation and by diverting business away from those parts of the economy that are proved sound by the willingness of their customers to pay enough to cover total costs. At a time when the strength of the national economy is being endangered by military expenditures, it is amazing that so many persons, especially businessmen, do not recognize the additional danger of collecting huge amounts of taxes to pay subsidies.

It has thus far proved futile to attack unfair discrimination in taxing and spending in transportation where the unfair discrimination is most easily demonstrable and most harmful. But those who believe in private enterprise have the duty of unceasingly exposing and attacking all policies inimical to private enterprise before they cause disaster; and never did unsound policies of taxing and spending constitute such a menace to the national economy as they do now.

MORE SUPERVISION NEEDED FOR WORK EQUIPMENT

Is top management fully aware of the pressing need for adequate staffs and organizations to supervise the maintenance and use of the growing number of roadway machines? The very fact that relatively little action is going on in this quarter suggests that the question must be answered in the negative. A year ago this problem was discussed fully, specifically and constructively in an address to the American Railway Engineering Association by Edgar Bennett, assistant chief engineer of the Southern. In spite of the acclaim Mr. Bennett got at the convention, and the wide distribution made of copies of his message afterwards, a recent survey by *Railway Age* indicates that little has been done to improve the situation to which Mr. Bennett drew such timely attention.

Accordingly, what Mr. Bennett said a year ago needs

repetition and further discussion. He spoke under the sponsorship of the Maintenance-of-Way Work Equipment Committee, of which he had been chairman, and showed how tremendously the investment in maintenance-of-way work equipment had recently increased. "But," he quickly added, "you are losing many of the benefits that you deserve from that large investment because you do not have enough trained men to supervise the use of the machines it represents. Investing huge sums in work equipment and then failing to provide an organization to supervise it may be likened to buying an ocean liner and failing to provide a captain and other officers."

He reminded his listeners that conditions on the railroads today are far different from those at the beginning of the work-equipment era, when the principal item of such equipment was the track motor car which—consisting simply of a gasoline engine mounted on a hand-car frame—was maintained by any "handy man." "We are no longer living in the motor-car era," Mr. Bennett continued, "and what may have been considered satisfactory for that day is not satisfactory in this machine age of expensive and complicated work equipment. We can no longer afford to place responsibility upon a 'handy man' with little or no supervision."

It would, however, be inaccurate and unfair to lay at the door of management all or most of the shortcomings in work-equipment supervisory organizations. In fact, some of this blame is accepted by those directly in charge of work equipment. Questioned about this matter recently, one of these officers conceded that he and his colleagues had seldom explained fully the fact that investments in work equipment alone are insufficient; that these outlays must be paralleled by expenditures to secure properly trained operators. What has happened, he went on to say, is that "machines costing many thousands of dollars have been operated by men who have had no more than a few hours of instruction by a manufacturer's representative. Consequently, much equipment has been abused and improperly used." Consider, by contrast, the care with which mechanical repair and supervisory forces are trained in "schools" to operate and service diesel locomotives.

A major factor in keeping work-equipment supervision at such dangerously low levels has been management's apparent belief that the operation and care of roadway machines can be adequately supervised by roadmasters or track supervisors. This is a fallacious conclusion. Such supervisory line officers are usually "general practitioners" who do not have the time, and often not the interest or inclination, to give the operation of work equipment proper attention. If machines are to substantiate the claims to economy made in their behalf, then they must be under the supervision of men who have no other responsibilities, who know the limitations of capacity of the machines, who will not tolerate abuse of the equipment, and who will keep the machines as busy as possible.

What is an adequate supervisory organization that will assure the maximum effectiveness of work equip-

ment? Mr. Bennett outlined a typical supervisory organization which could be modified to suit conditions on any railroad. In doing so, he insisted that, whatever the extent of the organization provided, it should be given complete authority to coordinate all of the activities in connection with work equipment from its purchase to its retirement, inclusive—or, as he said, "from the cradle to the grave." No railroad had such an organization at the time Mr. Bennett spoke, and no railroad has one now.

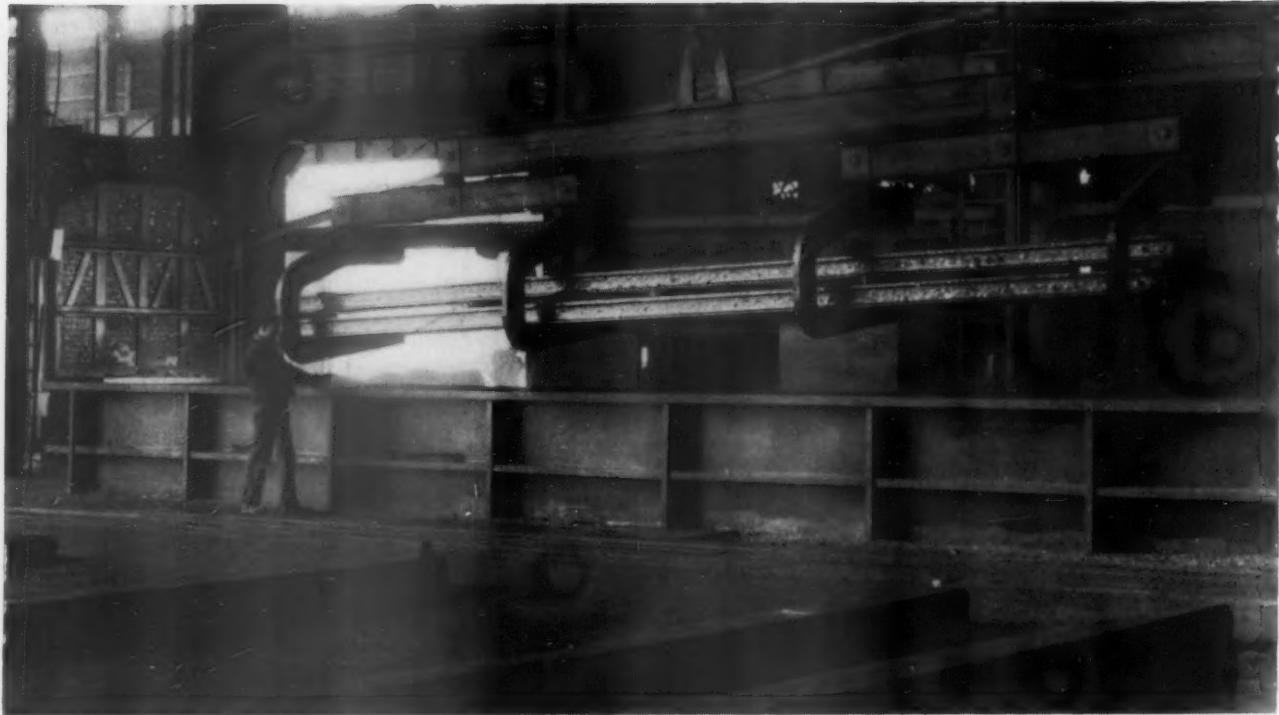
THE PROCUREMENT VALUE OF THE SCRAP SUPPLY

The backbone of all the necessary things that have to be built and repaired to keep the railroads running is a supply of metals—steel, iron, copper, zinc, tin and lead—and it is a bit superfluous to say that in these times, especially, metals and metal products are rather difficult to get. The railroads use thousands of tons of metals of all kinds that are worth many millions of dollars and there are two sources of supply, either to buy new metal products in the open market or, to use a term metaphorically, do a bit of "horse trading" by turning back into the supply channels a generous volume of scrap of all kinds to be re-refined or melted into the tonnage that comes from the mills and foundries as new shapes, castings or rough or finished products.

The railroad industry is one of the most important sources of scrap in this country and the importance of scrap, both ferrous and nonferrous, to the industry is comparable to the importance of having an automobile to trade in when you want to get a new one in a hurry. In times like these the ability of the railroads to get metal products may depend more and more upon the amount of scrap that the industry itself turns back into the channels reaching directly the suppliers of railway products.

Scrap is a scarce commodity, and there's plenty of competition these days for every available pound. The price of scrap and the bidding that is going on offers a great temptation to many railroads to sell scrap to the highest bidder and, in many cases, thereby to divert that scrap to manufacturers of products foreign to railroad usage. Denied the opportunity to obtain scrap from the railroads, some suppliers find it difficult to secure what they need to fill orders.

A railroad may find in the long run that the few dollars profit it makes by selling its scrap to other than manufacturers of railway supplies is more than wiped out by the higher cost of these supplies when their own scrap comes back to them after having passed through outside trading channels, each having made its own profit. Scrap kept within the boundaries of the railway supply industry is the cheapest way of making a good "horse trade" and has the added advantage of assuring that there is a horse in the stable when needed.



These rails are being heat-treated at the Steelton plant of the Bethlehem Steel Company for installation in track as an

experiment to determine their increased resistance to shelling and to flow on the low sides of curves

Highlights of A.R.E.A. Research Activities

Work of past year has included studies on shelly rail, failures in rail and joint bars, tie wear, train speeds on curves, impact on bridges, fatigue of wood stringers and roadbed stabilization

By G. M. MAGEE
Research Engineer, Engineering Division
Association of American Railroads

The research activities of the American Railway Engineering Association were marked during the past year by the movement of the research staff to the new Central Research Laboratory of the Association of American Railroads in the Technology Center of the Illinois Institute of Technology at Chicago. The new laboratory building has provided much better space and more adequate facilities for conducting the work of the research staff, and considerable headway has been made in providing the equipment needed for the various research projects. Additional facilities are needed, however, to undertake new work being contemplated and plans are underway to provide, during the coming year, chemical and metallurgical testing facilities and for the installation of rolling-load machines for conducting rail, joint-bar, and tie-wear tests. Plans are also under way for constructing a repeated load machine for tests on ballast and soils.

During the past year there have been many interest-



SR-4 strain gages are cemented to the upper and lower fillets of a 132-lb. rail in curved track to determine stresses in the web. Wires lead to amplifier and oscilloscope which will record the stresses

ing developments in the research projects sponsored by the various committees of the A.R.E.A. Rail has always been a subject of primary interest to railway engineers because of its importance in providing safe railway transportation. Development of the control-cooling process has been very effective in reducing the incidence of transverse fissures. There are, however, two other types of rail failures which are causing much concern and on which research study is being concentrated. One of these is shelly rail, a problem of particular importance on curved track, but even of concern on tangent track. The horizontal shelly crack which starts near the gage corner of the rail occasionally develops in a transverse direction, producing a type of failure described as a detail fracture from a shelly spot. Of particular interest this year has been the production of heat-treated rails and low-alloy rails, both of which have improved metallurgical properties and increased resistance to this type of rail failure. The Bethlehem Steel Company, in cooperation with the Rail committee and the Chesapeake & Ohio, the Norfolk & Western and the Pennsylvania, has produced heat-treated rail for test installations on curved track on each of these three railways.

The heat-treated rail is of the regular rail chemistry, but, following the control-cooling process, it was reheated, oil quenched and drawn. After very extensive laboratory development, including some 350 experimental heats, the United States Steel Company developed an alloy steel of manganese-chrome-vanadium analysis. Rails rolled from this steel are called C-V rails. These rails can be produced in the same manner as present rails but they have much superior physical properties. Track installations of C-V rail have been made on the New York Central and the N. & W. Rolling-load tests conducted at the University of Illinois have shown that both the heat-treated and the C-V rail will withstand more than five times as many cycles of the severe rolling-load tests as ordinary rail without developing shelling.

The development of cracks in the upper fillets at the rail ends and at the first bolt hole is also a matter of increasing concern. The recently adopted new sections of 115-lb. and 132-lb. RE rail, together with the new

rail drilling having the end bolt hole 1 in. further from the rail end, are expected to be helpful in controlling this condition. Laboratory fatigue tests completed last year at the University of Illinois have indicated the very great importance of corrosion in the development of this type of rail failure and it is evident that control of corrosion is a necessity within rail joints if these failures are to be eliminated.

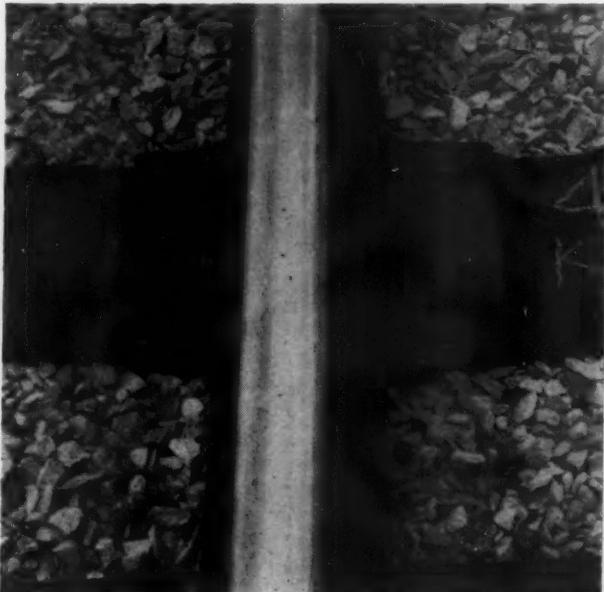
Fatigue failures at the top centers of joint bars have received concentrated attention. Laboratory studies have been made of joint bars which have failed in track and negotiations made with the steel mills for the production of joint bars under special, controlled heat-treatment conditions, in order to determine the possibility of reducing joint-bar failures through improved or more uniform heat treatment.

Tie Pads of Special Interest

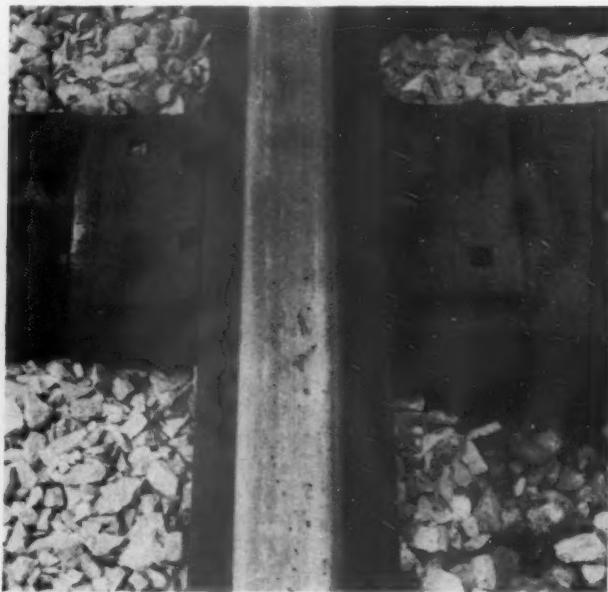
In the research projects sponsored by the Track Committee the installation at London, Ky., on the Louisville & Nashville, of tie plate fastenings for reducing tie plate wear of the ties, together with installations of various types of tie pads, has been of particular interest. Tie pads are a subject of special current interest and manufacturing companies are exerting their efforts toward the development of a low-cost tie pad that will effectively protect the tie.

During the past year two new tie plate designs developed by the research staff were recommended by the Track Committee for adoption by the association. These designs are for use on curved track where the lateral forces produce greater tie wear at the outer end of the tie plate, resulting in the rail tilting outward, widening the track gage, and requiring the frequent re-adzing of the ties.

The two new tie plate designs, one for 115-lb. and the other for 132-lb. RE rail, not only provide a greater area, which reduces the average unit pressure of the tie plate on the tie, but they also provide an eccentricity of $1\frac{1}{4}$ in., which will make the intensity of bearing pressure less at the outer toe of the tie plate,



These views were taken at the location of the test of hold-down fastenings and tie pads on the L. & N. At left is an



installation of tie pads, while at the right the tie plates are held down by drive studs



Measuring the distance between the contact surfaces for a frog bolt at a crossing as part of a test to determine the benefits of spring washers in maintaining bolt tension

thus reducing the tendency of the rail to tilt outward.

Considerable progress has been made on the research work aimed at developing specifications for spring washers for use on crossing frogs. Oscillograph recordings were made of the change in bolt tension on a heat-treated bolt rail crossing in main-line track under high-speed trains. This was supplemented with continuous measurements of loss in bolt tension and wear at the fishing surfaces. The data obtained have indicated that the nuts do not back off as long as there is any bolt tension remaining and that the high reactive washers are effective in maintaining tension. However, full benefit of the high reaction was not obtained because the nuts were not sufficiently hard to withstand distortion. It is evident that the use of harder nuts will make the spring washers more effective.

Under the sponsorship of the Joint Committee on Relation between Track and Equipment and the Track Committee, an interesting test was run on the L. & N. during the year to obtain information on the permissible speeds of trains on curved track. Of particular significance in the results was the importance of the springing characteristics of the car. Due to the tilting of the car body on the springs from the unbalanced centrifugal force, much of the benefit of the superelevation was lost insofar as the passenger is concerned. In further tests, special consideration will be given to modern types of cars with soft or long-travel springs, which may considerably increase this tilting action, although being quite beneficial in other respects.

A major portion of the work of the research staff during the year was concerned with bridge tests for the Committee on Impact and Bridge Stresses. Additional field data were gathered to determine the impact effect on girder spans. A new development of much interest was the measurement of secondary stresses in bascule bridges at the riveted joint nearest to the counterweight. It was found that quite high localized tension stresses developed at this joint when the bascule bridge was in the open position due to the leverage action of the counterweight.

Stress measurements made on a few concrete bridges indicate that the actual measured stresses were considerably below those computed by the usual design formulas and it is anticipated that further study of this subject will result in revision of design practices, which will save considerable material in the construction of reinforced-concrete spans. Measurements were also made on a number of railroad bridges over highways having a transverse-beam floor system or longitudinal beams due to limited head clearance to determine the distribution of the load to the individual beams.

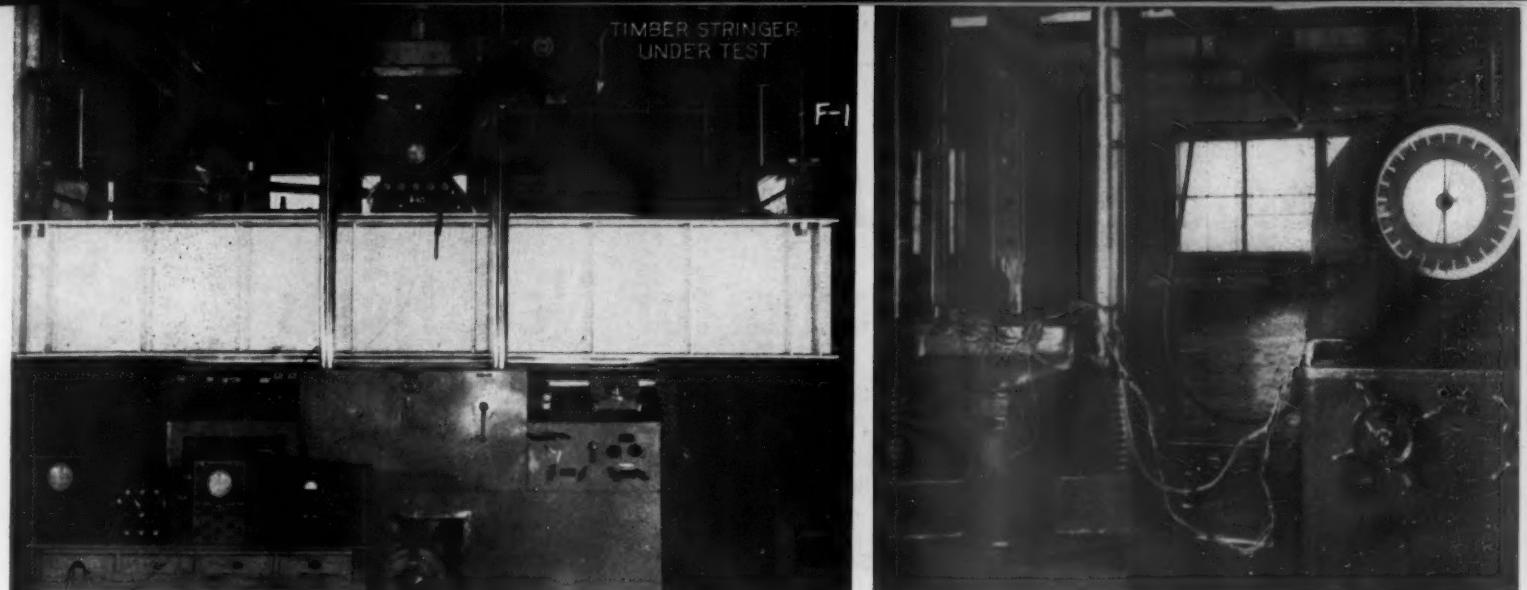
The investigation of floorbeam hangers being conducted at Purdue University under the sponsorship of the Committee on Iron and Steel Structures has produced three significant explanations for the failures that occur in these hangers, usually near the top connection to the upper chord member of the truss. It was found that when rivets come to a solid bearing on the joined plates, quite high tearing stresses are developed at the sides of the rivet holes.

It was also found that the sharp corners provided in the coping of channel members in pin-connected trusses, where they are cut to clear the chord members, produce very high localized stresses which can be materially reduced by providing a large fillet radius. The use of intermittent plates to secure the channels together to form the hanger member was found to produce reversed flexure and additive bending stresses. Hangers composed of wide-flange beams or of channels secured by lattice ties were found to perform more nearly in accordance with design calculations.

High-Strength Bolts Show Promise

This same committee has sponsored a contribution annually for several years to the Research Council on Riveted and Bolted Structural Joints. Of particular interest in the work of this council have been the encouraging results indicated by the use of high-strength bolts in lieu of rivets. Due to their gripping action the high-strength bolts tend to reduce the stress concentration at the hole. Field measurements by the research staff have indicated the bolts will stay tight more effectively than will rivets and that the use of high-strength bolts in making field connections and for the replacement of loose rivets offers important savings in bridge erection and maintenance costs. Tests being conducted to determine the strength of riveted joints formed with low-alloy steels are also developing interesting results.

Laboratory fatigue tests on timber stringers were conducted last year at Purdue University under the sponsorship of the Committee on Wood Bridges and Trestles. Full-size wood stringers are being tested in a hydraulically operated repeated-load testing machine. The tests have offered considerable difficulty in many respects, but most of these have been ironed out and valuable information is being obtained. Three beams have been tested to destruction and generally the failures have been in horizontal shear with the indication that tension failures are being closely approached. Of particular significance is



Left—Krause-Purdue hydraulic testing machine in laboratory at Purdue University making fatigue tests on a full-size wood stringer. Right—A test set-up which is employed in the

Central Research Laboratory to determine the stresses around the bolt holes in a rail joint when the bolts come to a solid bearing on the rail web

the indication that the development of seasoning checks and splits in the timbers has an important effect in reducing the effective area of the wood to resist horizontal shear.

Tests have also been conducted at Purdue University on waterproofing coatings for concrete under the sponsorship of the Committee on Waterproofing. Emphasis is being placed on the development of a laboratory acceptance test which will give assurance that waterproofing coatings which pass this test will give good protection over a long period of time. The performance of most waterproofing coatings now tested has not been as satisfactory as hoped for.

More Knowledge on Soils

The investigation of stabilization of roadbed in the field by the research staff and in the laboratory at the University of Illinois, under the sponsorship of the Committee on Roadway and Ballast, has continued with further addition to our knowledge of soil behavior. The installations of grouted track which are being observed have, in general, continued to show very satisfactory performance, with substantial savings in maintenance costs. Measurements were made during the year on the New York Central with pressure cells designed by the research staff to determine vertical and horizontal pressures in the roadway under the track structure from passing trains. In general, the measured pressures in the vertical direction agreed well with those calculated from the Newmark charts. Horizontal pressures near the center of the track were found to be greater and, away from the track, less. Following grouting there was in general found to be a reduction in the intensity of pressure.

The cooperative investigation with the National Lumber Manufacturers' Association, which is being sponsored by the Committee on Ties, has continued throughout its third year at the Timber Engineering Company laboratory at Washington, D. C. Many interesting possibilities have originated in this investigation. Of particular promise is the development of a one-step method for seasoning and treating ties which it is hoped will reduce checking and splitting through the elimination of the seasoning period during which the checks and splits develop. Promising results are being

obtained in the exposure tests of treated oak specimens with different top coatings. Other work of interest is in connection with laminated ties and chemical deterioration of the wood structure from the corrosion products from tie plates and spikes.

Bigger Budget for 1951

The Engineering Division budget for 1951 promises an active year of work. It includes 30 research projects with a total appropriation of \$354,770, an increase of 20 per cent over the 1950 budget. Ten of these projects are either new or revived. Of particular interest in the new projects are tests on 78-ft. rail, on fire-retardant paints for timber structures, on soils and ballast, and on vegetation control by chemicals.

The cost of maintaining rail joints is a substantial portion of track-laying and surfacing costs so that the elimination of 50 per cent of the joints with 78-ft. rail would afford substantial economies. The manufacturers are now studying the problems to be met in order to furnish 78-ft. rail and several railroads are making test installations of this rail length so that data may be obtained on costs and practical aspects of laying and maintenance. The research staff will make measurements on these installations to obtain additional data on service performance.

The investigation on fire-retardant paints is aimed at a reduction of fire losses to the railways, which losses in some years have been as much as \$2 million. A type of ignition test will be developed which will be used in conjunction with an accelerated weathering procedure to evaluate various fire-retardant methods that are available.

For the soil and ballast tests, plans are under way for the construction of a 30-ft. by 40-ft. concrete slab supported on piling, on which a full panel of track can be placed over a 5-ft. fill and ballast. An oscillator will be used to apply repeated loadings, similar to the method used by the French railways, to study the stability and performance of various soils and types and gradation of ballast.

The work on vegetation control by chemicals will be carried out at Iowa State College under a cooperative agreement. Tests will include field plots with various types of vegetation and chemical control.

Construction and Maintenance Expenditures Heading for New Highs

In 1951, the railroads of the United States and Canada plan to spend an estimated \$435,000,000 for fixed-property additions and betterments, \$1,750,000,000 for maintenance of way and structures, and \$19,000,000 for work equipment and power tools. These estimates are based on information obtained by *Railway Age* from the engineering officers of 37 representative railroads, accounting for 66 per cent of all the operated mileage of the two countries. Should present plans materialize the total of road capital expenditures—to meet defense and shippers' needs—will be larger this year than in any year since 1930; the fixed-property maintenance expenses will reach an all-time record—reflecting traffic requirements and very high costs—and work-equipment purchases will amount to only \$100,000 less than the record dollar volume of 1947.

The upward surge of railroad construction work that followed the increase in traffic during the latter half of 1950 is continuing to gather momentum. With incom-

pleted work totaling more than \$220,000,000 having been carried over from 1950, and new projects being started at almost a feverish rate to escape, if possible, anticipated "war-like" controls on materials, as well as probable manpower shortages, construction volume is almost certain to reach record proportions.

This expectancy is further substantiated by the fact that, of 31 roads giving *Railway Age* details of their improvement plans for 1951, 23 indicated that their expenditures would be greater than last year—with one even planning to spend twice as much. One road, already heavily committed to improvement work, plans to spend about the same as in 1950, while seven roads plan to spend less—but only \$2,500,000 less. As William White, president of the Delaware, Lackawanna & Western, said recently, these expenditures are for "capital improvements which involve no luxuries whatever. They include only items that permit greater efficiency and economy, give better service to the public or provide the capacity to handle the volume of business foreseen during the emergency period."

Yard and terminal improvement work, which constituted the largest single category of capital improvements in progress during 1950, appears to be headed toward a similar ranking in 1951. Two-thirds of the railroads replying to our inquiry indicated that they have allocated more money to yard improvements than to any other class of construction work. Supporting this is the fact that at least 85 projects, to cost \$48,000,000 when completed, were carried over from 1950.

Locomotive-servicing facilities, both steam and diesel, also figure prominently in the construction plans of the railroads this year, with six roads planning to spend more than \$1,000,000 each and one road more than \$6,000,000 for this purpose. Three of these large projects involve facilities for handling steam locomotives, in contrast to the trend of recent years when diesel facilities were being built in proportion to the large number of such locomotives being purchased.

Revisions of grade and alignment comprise the third largest category of capital improvements planned this year by the roads that gave detailed information on their budgets. Of these roads, 15 plan to spend a total of about \$14,000,000 for work of this nature. Other roads are known to have started before the first of the year at least 15 projects which will cost close to \$25,000,000.

The construction of new lines, a class of improvement work closely allied with line revisions, and one that has been receiving little attention in recent years, is regaining some of its former prominence. As previously reported in *Railway Age*, more than 83 miles of new line are now under construction in the United States and 485 miles in Canada, with an additional 317 miles in Canada now under survey. Should a substantial portion of this work be completed this year, it could amount to a greater mileage than has been built in any of the past 20 years.

Signaling construction, slightly more of which was completed in 1950 than in any other year, figures prominently in the 1951 budgets. In fact, 20 railroads reported that they expect to spend more than \$63,000,-



More money has been allocated this year to the expansion of yard facilities than to any other class of construction work. This box car is rolling off the hump and through the main retarder of the Southern's John Sevier yard, now nearing completion at Knoxville, Tenn.

This \$5,000,000 import ore pier on the Baltimore & Ohio in Baltimore, Md., will go into operation in April



Locomotive-servicing facilities comprise the second largest category of construction work planned for 1951. One of the first to be completed this year is this modern steam locomotive enginehouse built at Calumet, Ill., by the Nickel Plate which is building a similar structure at East Wayne, Ind.

Many diesel-servicing facilities such as this one on the Baltimore & Ohio are being constructed throughout the country to take advantage of the full capacity of new motive power being purchased





The railroads are planning to lay more rail in 1951 than for several years

000 this year for miscellaneous construction, most of which will involve singaling or communication facilities. A considerable portion of this work will include the protection of vehicle and pedestrian traffic at grade crossings by the installation of automatic gates, flasher signals or other devices. It is estimated that the number of crossings at which such additional protection will be installed during 1951 will equal, if not exceed, the high totals of the last several years. The controlling factors in the actual amount of work accomplished will undoubtedly be shortages of material and manpower. Actual installations totaled 789 in 1946, 1,084 in 1947, 1,391 in 1948, 1,571 in 1949 and 1,573 in 1950.

Grade-crossing eliminations are expected to be more negatively influenced by material shortages than many other items of construction work. Being less contributive to the defense effort than most railway improvement projects, they will unquestionably be among the first casualties of any restrictive controls that may be placed on construction. However, 22 roads report that they are now participating with individual states in 112 grade-separation projects. It is questionable, however, that many new projects in this category will be started.

Maintenance Expenses High

The railroads of the United States and Canada have in 1951 scheduled ambitious programs for the maintenance of their fixed properties. These programs, if completed as scheduled, will probably cost more than any other year's work in history. On the basis of reports received by *Railway Age* from 37 roads, maintenance expenditures of all the roads of the two countries will reach an estimated total of \$1,750,000,000. This is about \$250,000,000 more than was spent in 1950. For these higher expenditures the railroads, however, expect to get more accomplished, despite higher costs. Possible exceptions are the Canadian roads, on which the 40-hour week is scheduled to go into effect in June.

It is estimated that all roads in Canada and the United States will lay about 1,980,000 net tons of rail, install 38,000,000 crossties, apply 34,300,000 net tons of ballast, and surface out-of-face about 26,000 miles of track. Such an ambitious program exceeds the amount of work accomplished last year by at least 500,000 net tons of rail laid, 5,000,000 crossties installed, 1,000,000 tons of ballast applied and 1,000 miles of track surfaced.

The laying of the estimated total tonnage of rail is predicated on the ability of the steel mills to furnish it. However, few railroads anticipate having to take less than they want. In fact, of 36 roads giving specific information as to their needs, all but eight expect to obtain their full requirements. Two of these roads are so confident of the ability of the steel mills to fill their orders that they have each scheduled the laying of more than 100,000 tons. Three other roads expect to lay more than 90,000 tons each.

Tie renewals have reached new all-time lows for each of the past three years. If present replacement programs can be consummated, however, the renewal decline will end, thus putting a stop to the accumulation of deferred maintenance in this category, which is now estimated to total about 100,000,000 ties.

While carrying out their share of such "healthy" track maintenance programs, 14 roads expect to clean 4,100 miles of intertrack ballast and 4,463 miles of shoulder ballast. In addition 20 roads plan to crib-clean 3,306 miles of track.

Consistent with the size of the budgets planned for the maintenance of track, those for the maintenance of bridges and buildings are also large. In fact, 30 roads reported to *Railway Age* that they plan to spend in 1951 a total of \$38,913,791 for the maintenance of bridges and \$48,428,267 for the upkeep of buildings. These plans program the spending of about \$6,000,000 more for bridge work and \$5,000,000 more for building repairs than these same roads spent last year.

In some respects, it is unfortunate that such ambitious maintenance programs have had to be scheduled when a manpower shortage is anticipated. To stretch available manpower to the greatest extent possible, railway officers indicate they plan to buy 9,000 power tools and machines in 1951, at a cost of about \$19,000,000. This estimate of anticipated purchases compares with 8,700 units of equipment bought in each of the last two years and with 9,300 units purchased in 1948. Purchases may even exceed the 1948 total if enough material is available throughout the year for manufacturers to fill all orders. In any case, with work programs larger than for years, with the bogey of labor scarcity just around the corner, and with purchasing power going up due to increased freight traffic, nothing except unfilled orders caused by scarce basic materials can keep the units of work equipment delivered below existing records.



A.R.E.A. program and Exhibit In Print SECTION

RECORD OF A YEAR'S PROGRESS

The absence of a regular manufacturers' exhibit during the A.R.E.A. convention has prompted RAILWAY AGE to present in the following pages an "exhibit in print" of products of direct interest to railway engineering and maintenance officers. This "exhibit" consists of descriptions of products that were introduced new during the past year or existing products in which improvements were made during this period. These articles, kept as brief as possible to permit rapid perusal by the busy railway officer, truly comprise an exhibit in print for all members of the National Railway Appliances Association, as well as for a number of other interested manufacturers who were requested to submit suitable material.





H. S. Loeffler

The program of the fiftieth annual convention of the American Railway Engineering Association, given in detail on the opposite page, shows that, within the short space of three days (March 13-15), those attending the convention will hear reports of the association's 22 technical committees along with a generous variety of addresses on subjects of particular interest today. Continuing an innovation started several years ago, a substantial number of addresses, 13 to be exact, will be presented in connection with the various committee reports.

In addition, the opening session will be characterized by a number of addresses that should attract particular attention. Sounding the keynote of the meeting, J. H. Aydelott, vice-president, Operations and Maintenance Department of the Association of American Railroads, will speak at this session on "A Wartime Economy—Will It Leave the Railroads Unscathed?" The junior members will then have their moment in the spotlight in the form of an address by P. T. Trax, assistant supervisor of track of the Pennsylvania, who will speak on "A.R.E.A.—From the Viewpoint of a Junior Member." Next the emphasis will shift to research as G. M. Magee, research engineer, Engineering Division, A.A.R., speaks on "Highlights in Engineering Research."

Other highlights of the meeting will be the presentation at the opening session of an honorary membership in the association to John E. Armstrong, chief engineer, Canadian Pacific, and a past-president of the association, and the annual luncheon on Wednesday, at which the speaker will be J. M. Budd, vice-president, operations, of the Great Northern. The subject of Mr. Budd's address will be "American Railroads at Mid-Century." Advance registrations for tables at the luncheon indicate an unusually large turnout.

Addresses to be presented in connection with the committee reports will cover a range of subjects. Along with the report of the committee on Highways, General James A. Anderson, commissioner of highways of Virginia, and president of the American Association of State Highway Officials, will talk on "Highways." The situation that faces the railroads with respect to the supply of technical personnel will be discussed by Dean O. W. Eshbach, Northwestern Technological Institute,

Well-Balanced Program

Features of convention at Palmer House, Chicago, include 22 committee reports and many addresses on timely subjects—J. M. Budd to be speaker at annual luncheon

following the report of the Committee on Cooperative Relations with Universities. What the dieselization program has meant in the way of obsolescence of railway facilities will be the subject of a talk by J. B. Akers, chief engineer of the Southern, in connection with the report of the Committee on Records and Accounts, while Dr. L. K. Sillcox, executive vice-president of New York Air Brake Company, will talk on "Terminals and Trains," along with the report on the Committee on Economics of Railway Location and Operation.

How the maintenance practices of the American railways "stack up" in the eyes of European maintenance-of-way engineers will be the subject of a paper to be read by G. M. O'Rourke, assistant engineer maintenance of way of the Illinois Central, following the report of the Committee on Economics of Railway Labor, while recent developments in fire prevention will be discussed by J. P. Gallagher, general superintendent of insurance and fire protection of the New York Central, in connection with the report of the Committee on Buildings.

In addition to his address on the opening session Mr. Magee will appear twice on the program. He will speak on "Progress on Crosstie Research," following the report of the Committee on Ties, and again in connection with the report of the Committee on Rail, at which time his subject will be "Rail Failure Statistics and Their Reporting." Other addresses to be presented in connection with this same committee report will be one by L. S. Crane, engineer tests of the Southern, on "Research Attack on the Shelly Rail Problem"; by R. E. Cramer, special research associate professor, University of Illinois, on "Shelly Rail Studies at the University of Illinois"; and by R. E. Jensen, special research assistant professor of engineering material, University of Illinois, on "Review of Joint Bar Research."

Another address based on research studies will be one presented by J. L. Leggett, professor, University of Kentucky, on "Fatigue Tests of Timber Stringers," which he will read following the report of the Committee on Wood Bridges and Trestles. Finally, G. H. Paris, railroad representative, Structural and Railway Bureau, Portland Cement Association, will talk on "Pre-stressed Concrete," in connection with the report of the Committee on Masonry.

All of the regular sessions of the meeting will be presided over by President H. S. Loeffler of the association, who is assistant chief engineer of the Great Northern. He will be assisted by Vice-President T. A. Blair, chief engineer of the Atchison, Topeka & Santa Fe system.

In the absence of a manufacturers' exhibit during the meeting an "Exhibit in Print" of new or improved products of interest to railway engineering and maintenance officers is presented in the following pages.

for A.R.E.A. Meeting

PROGRAM

Fiftieth Annual Meeting

Palmer House, Chicago

TUESDAY, MARCH 13

Morning Session—9:45 a.m.

Address by H. S. Loeffler, president

Reports of secretary and treasurer

Greetings from Signal Section, A.A.R., D. W. Fuller, chairman

Greetings from Electrical Section, A.A.R., H. F. Finnemore, chairman

Address by J. H. Aydelott, vice-president, A.A.R., on "A Wartime Economy—Will It Leave the Railroads Unscathed?"

Presentation of Honorary Membership to John Edwin Armstrong

Address by P. T. Trax, assistant supervisor of track, Pennsylvania, on "A.R.E.A.—From the Viewpoint of a Junior Member."

Address by G. M. Magee, research engineer, A.A.R., on "Highlights in Engineering Research"

Reports of Committees on

Highways—Address by General James A. Anderson, commissioner of highways of Virginia and president, A.A.S.H.O., on "Highways"

Cooperative Relations with Universities—Address by O. W. Eshbach, dean of Northwestern Technological Institute, on "Future Needs, and the Supply of Technical Personnel for the Railroads"

Afternoon Session—2:00 p.m.

Reports of Committees on

Water Service and Sanitation

Yards and Terminals

Uniform General Contract Forms

Records and Accounts—Address by J. B. Akers, chief engineer, Southern, on "Obsolescence in the Dieselization Program"

Economics of Railway Location and Operation—Address by Dr. L. K. Silcox, executive vice-president, New York Air Brake Company, on "Terminals and Trains"

WEDNESDAY, MARCH 14

Morning Session—9:00 a.m.

Reports of Committees on

Maintenance-of-Way Work Equipment

Economics of Railway Labor—Address by G. M. O'Rourke, assistant engineer maintenance of way, Illinois Central, on "Impressions of a Group of European Railway Maintenance-of-Way Engineers on Their Tour of U. S. Railroads."

Buildings—Address by J. P. Gallagher, general superintendent of insurance and fire protection, New York Central, on "Fire Prevention"

Wood Preservation

Roadway and Ballast

Continuous Welded Rail

Association Luncheon—12:00 Noon

Announcement of results of election of officers

Address by J. M. Budd, vice-president, operation, Great Northern, on "American Railroads at Mid-Century"

Afternoon Session—2:30 p.m.

Reports of Committees on

Ties—Address by G. M. Magee, research engineer, A. A. R., on "Progress in Crosstie Research"

Track

Rail—Address by G. M. Magee, research engineer, A.A.R., on "Rail Failure Statistics and Their Reporting"

Address by L. S. Crane, engineer of tests, Southern, on "Research Attack on the Shelly Rail Problem"

Address by R. E. Cramer, special research associate professor, University of Illinois, on "Shelly Rail Studies at the University of Illinois"

Address by R. E. Jensen, special research assistant professor of engineering materials, University of Illinois, on "Review of Joint Bar Research"

THURSDAY, MARCH 15

Morning Session—9:00 a.m.

Reports of Committees on

Wood Bridges and Trestles—Address by J. L. Leggett, professor, University of Kentucky, on "Fatigue Tests of Timber Stringers"

Clearances

Waterproofing

Impact and Bridge Stresses

Masonry—Address by G. H. Paris, railroad representative, Structural and Railway Bureau, Portland Cement Association, on "Pre-stressed Concrete"

Iron and Steel Structures

Closing business



J. H. Aydelott

"A Wartime Economy — Will It Leave
the Railroads Unscathed?"



J. M. Budd

"American Railroads at Mid-Century"



G. M. Magee

"Highlights in Engineering Research"



Board of directors of the N.R.A.A. in a recent meeting—Left to right—Lewis Thomas, assistant secretary (Q & C Co.); Kenneth Cavins, director (Fairmont Railway Motors, Inc.); Max K. Ruppert, honorary director (P. & M. Co.); J. P. Kleinkort, director (Ramapo Ajax Division, American Brake Shoe Company); President McFarlane (Cullen-Friestadt Company); Jess Mossgrove, vice-president (Austin-Western Company); W. H. Tudor, treasurer (International Harvester Company); and Eugene Harbeck, director (National Lock Washer Company). Not present were R. A. Carr, secretary (Dearborn Chemical Company); C. L. Mellor, honorary director (Barco Manufacturing Company); J. B. Templeton, director (Templeton, Kenly & Co.); and W. B. Blix, director (Nordberg Manufacturing Company)



By H. M. McFARLANE
President
National Railway Appliances Association

In keeping with the agreement made with the Track Supply Association and the Bridge and Building Supply Men's Association, resulting in exhibitions being held every 18 months beginning with September 1950, the National Railway Appliances Association is not holding its usual exhibition this year in connection with the convention of the American Railway Engineering Association. The next exhibition to be sponsored by the N.R.A.A. is scheduled to be held in March 1952. In lieu of the regular exhibit I commend your attention to the "exhibit in print" which is presented by *Railway Age* on following pages of this issue.

In preparing this "exhibit" all member companies of the N.R.A.A., as well as other manufacturers of equipment and supplies used by the construction and maintenance-of-way forces of the railroads, were requested to submit information regarding products that were improved or brought out new during the past year. The nature and extent of the "exhibit" indicates that the manufacturers are continuing to exert every effort toward the improvement of their products to the end that maintenance-of-way men will have better tools, materials and machines to work with in combating high costs and the scarcity of labor that is beginning to make itself felt in many parts of the country.

One of the problems that must be faced at this time is the difficulty of getting sufficient materials and parts to permit our member companies to supply the railroads' need for their products. At the present time no formal

Suppliers "On Their Toes" in Filling Railroads' Needs

allocation program has been set up for railroad supplies other than cars and locomotives. In the meantime, the needs of the armed forces are rising. To meet these needs the "DO" (Defense Order) priority has been put into use, and orders backed by this priority have been placed with many of our member companies. In addition, the production capacity of many suppliers of work-equipment manufacturers is being devoted to the production of orders having a DO rating, with the result that they are not able to meet our needs without considerable delay in many instances. As an example, while it was formerly possible to obtain delivery of steel castings within 60 to 90 days, 7 to 9 months are now required with little or no hope of improvement unless a DO rating is available.

We all recall the difficulties that were encountered in getting maintenance-of-way materials and equipment during World War II. If the needs of the railroads for such products are to be met in a satisfactory manner during the present emergency it will be necessary that railroad orders receive more consideration than they did during the previous conflict.

What all this boils down to is that, if the railroads' requirements are to be met promptly in the present emergency, their orders must be backed by a priority rating that will permit the manufacturers to obtain the necessary materials. While the railroads must take the initiative in obtaining such a rating, the N.R.A.A. (and I am sure this applies also to the Track Supply Association and the Bridge and Building Supply Men's Association) is fully prepared to extend its assistance in any way possible to the end that the railroads' needs will receive the consideration justified by the importance of the service they render to the nation.

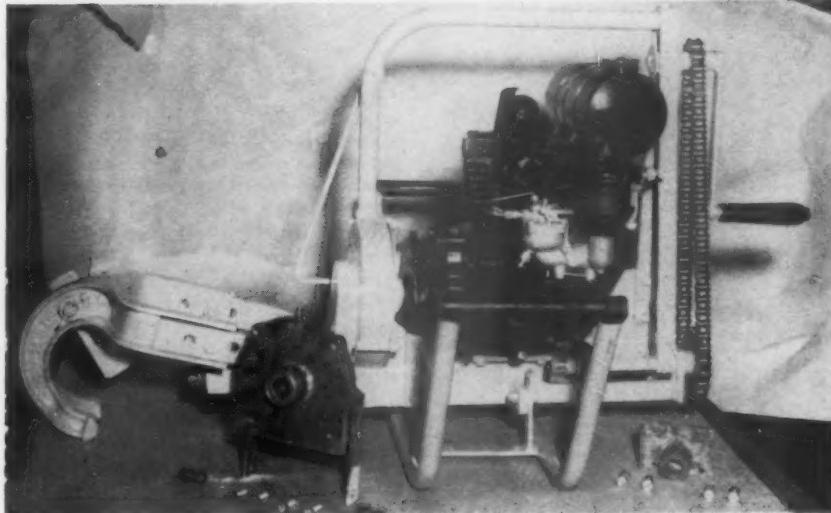
Exhibit In Print

New and Improved Products of the Manufacturers

Improved Power Track Drill 1

A number of improvements have been announced in the power track drill manufactured by the Buda Company, Harvey, Ill. A feed-screw stop has been added at the back end of the drill and a collar has been added to the spindle to limit both the forward and backward travel of the feed screw, thereby eliminating the possibility of feed-screw damage. Also, the spindle and feed screw are being made of a heat-treated, high-tensile alloy steel which resists wear, and the spindle is supported on Oiltite bearings, which eliminate the need for lubrication of this part.

In addition, the front of the reduction gear housing has been changed from a die casting to a fabricated and welded unit with a steel strap bolted to the drill frame for additional support. The purpose of this improvement is to reduce the possibility of damage resulting from improper feeding of the drill. A conversion kit is available which permits changing over Buda power track drills now in use.



The improved Buda power track drill

Couplings for Diesels 2

Two new couplings for servicing diesel locomotives, one for supplying locomotives with oil and the other for supplying water, have been developed by the Railroads Products Company, Cincinnati, Ohio. Each of these couplings consists of a coupling head with tapered lugs, a gasket, and a tail section to which the supply hose is attached. When servicing a diesel the oil or water coupling is locked tightly to the corresponding inlet coupling on the locomotive by twisting the coupling



The new couplings for supplying diesels with oil and water

head clockwise. No tool is required for this purpose. The couplings are so designed, it is reported, that the service man using them cannot mistakenly fill the oil reservoir with water or the water tank with oil.

The tail section of each coupling forms a smooth passageway for the liquid and swivels freely inside the coupling head, preventing twisting or kinking of the supply hose. The gaskets form a tight seal when the couplings are locked to a locomotive. The couplings are cast from a special aluminum alloy, and, while light in weight, are said to be resistant to rough handling.

Air Compressor 3

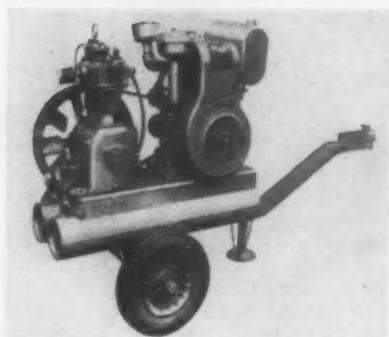
A new Spot-Air compressor, with a capacity of 36 cu. ft. per min., which will operate four Ingersoll-Rand MT-4 tie tampers, has been announced by the Ingersoll-Rand Company, New York. Known as the 3R-36, the unit weighs 265 lb. and stands 32 in. high on a 27-in. diameter base plate. Like the first Spot-Air compressor, the 3R-30, which was introduced in 1947, the 3R-36 is equipped with a special wheelbarrow mounting which enables one man to take the compressor and air tools almost anywhere.

The Spot-Air compressor incorporates a horizontal arrangement of three



The 3R-36 Spot-Air compressor has sufficient capacity to operate four Ingersoll-Rand MT-4 tie tampers

power cylinders and three air cylinders spaced alternately at 60-deg. intervals around a vertical single-throw crank-shaft which gives a smooth conversion of engine power into air power without the need of a heavy flywheel. The fuel tank has sufficient capacity for 2 to 2½ hours of continuous operation.



One of the new Gardner-Denver trailer-mounted air compressors

Trailer-Mounted Air Compressors 4

The Gardner-Denver Company, Quincy, Ill., has announced a new line of trailer-mounted air compressors for operating paint-spray guns, chipping hammers, light paving breakers, spaders, tampers and similar pneumatic equipment. Each compressor is driven through a V-belt by a gasoline engine. The trailer of each unit is mounted on two roller-bearing wheels with semi-pneumatic tires and is equipped with a drawbar, trailer hitch and stabilizer leg. The compressors are available in three different sizes.

Pneumatic Tamper 5

A new heavy-duty tamping gun, known as the MT 8, which develops twice the power of the company's MT 4 tamper, has been announced by the Ingersoll-Rand Company, New York. Reported to be powerful enough to permit leveling track without the necessity of using jacks, the MT 8 is particularly useful for tamping work at crossovers and bridge approaches, and for loosening cemented ballast prior to ballast-cleaning operations.



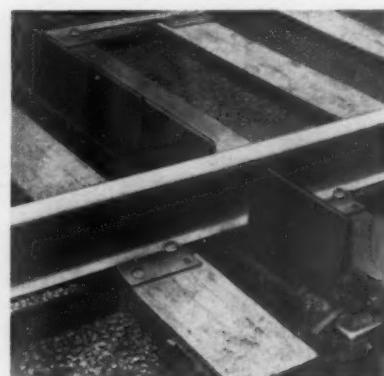
The Ingersoll-Rand MT 8 heavy-duty pneumatic tamper

Features of the unit include simplicity of design and low air consumption. Two of the tampers can be operated from the company's new 3R36 Spot-Air compressor.

Detector for Dragging Equipment 6

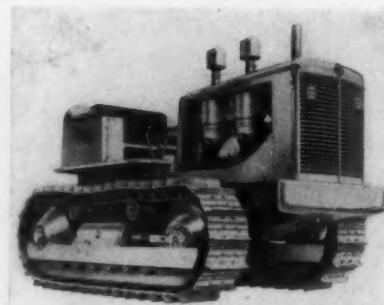
A new self-restoring dragging-equipment detector, known as the SRD-5, has been announced by the Union Switch & Signal Co., Swissvale, Pa. It is designed to be mounted directly on standard-length ties. It is arranged to operate with traffic in either direction and provides continuous automatic protection without the need for replacing the detecting element after each operation. The self-restoring detector is especially suitable for use on approaches to interlockings, tunnels and bridges, and ahead of car-inspection pits in classification yards.

Among the principal features attributed to the new detector are its simple, positive action and compact construction. Since it can be mounted on two standard 8-ft. 6-in. ties its installation is a relatively simple matter. Also there is no interference with ballast-cleaning equipment. Space requirements have been minimized by designing the restoring mechanism and cir-



The new dragging equipment detector provides continuous automatic protection without the need for replacing the detecting element after each operation

cuit controller to assemble directly on the ends of the bearing structures which are mounted between the ties, thus keeping all parts except the detector plates below the tops of ties.



One of the new Allis-Chalmers tractors is the HD-15

Two New Tractors 7

Two new models have been added to the line of crawler tractors manufactured by the Allis-Chalmers Manufacturing Company, Milwaukee, Wis. One of these, known as the HD-9, weighs 18,500 lb. and has a drawbar horsepower rating of 70. The other, called the HD-15, weighs 27,500 lb. and develops 102 hp. at the drawbar. Both units are powered by General Motors diesel engines, and both have six speeds forward and three in reverse.

Features of the new tractors include a constant-mesh transmission that permits the operator to shift from forward to reverse at any speed by one movement of a single control lever; unit-assembly construction which permits service men to remove and reinstall any unit in the power train — engine, clutch, transmission, steering clutch and final drive — without disturbing related assemblies; and spring-loaded seals for retaining grease in the final drive, truck wheels, idlers and support rollers, which are reported to permit operation for 1,000 hours without further lubrication. Other features contributing to ease and efficiency of operation include an adjustable seat, boosted steering, convenient grouping of controls, self-energizing brakes, and a tapered cowl for better visibility.

Truck Bodies 8

Six styles of truck bodies designed to meet the particular needs of railway maintenance forces are being offered by the Eastern Body Company, Philadelphia, Pa. A van panel type, in 9-ft. and 12-ft. lengths, is available for the general hauling of machines and parts, tools and materials. Equipped either with longitudinal steel folding seats or bin seats, it may be used for the transportation of men. Another type, 9 ft. long, is a repairman's unit, designed for making field and running repairs to machinery and equipment.

A small utility body, in 7½-in. and 9½-in. lengths, is offered for use by signal maintainers, bridge inspectors, or spot welders. A larger utility body, available in 9-ft. and 12-ft. lengths, is

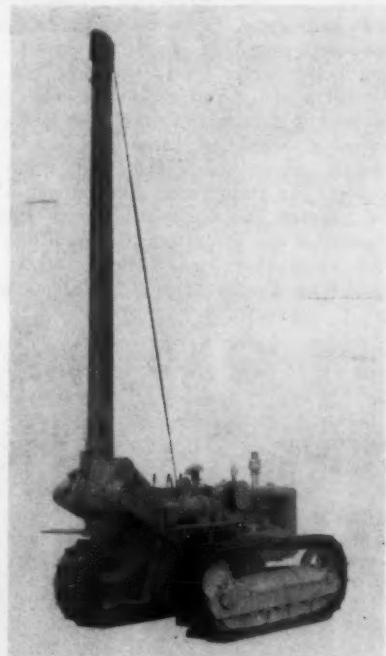
designed for track maintenance and signal gangs for carrying both men and tools. Another utility body, 14 ft. in length and with a separate riders' compartment in front, is designed for use in transporting telephone and substation line gangs, their tools and materials. An open express-type body, in 9-ft. and 12-ft. lengths and with 24-in. steel sides, is designed for the general hauling of machines, tools and materials, as well as for the occasional transportation of men when tools are not being carried.

Earth Auger

9

Trackson Company, Milwaukee, Wis., announces the addition of the Model EA4 earth auger to its line of equipment for Caterpillar track-type tractors. This machine is mounted on a Caterpillar Model D4 tractor and is designed for drilling holes, from 9 in. to 12 in. in diameter to a depth of 8 ft., for poles, anchor holes or tower footings. The manufacturer states that an average hole can be drilled in a minute or less through a range of all usable angles. Positive pressure clutches give fast lift of the auger out of the hole, and permit spinning to throw the dirt clear. The mast is positioned by a power winch to give fast lowering for travel and fast raising to vertical boring position.

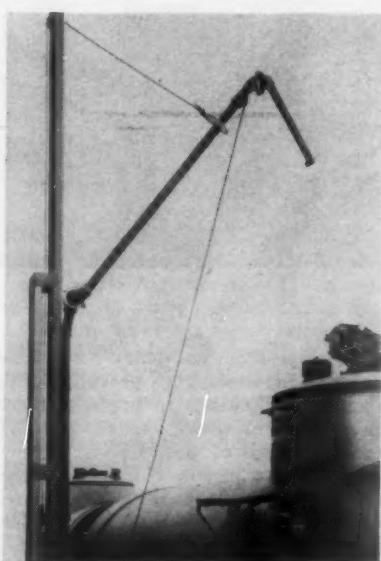
The auger is driven by a rear power take-off on the tractor. Two speeds forward and one in reverse drive the earth auger and winch. A positive roller-chain feed is said to apply a steady pressure on the auger bar, thus assuring smooth boring action.



The Trackson Model EA4 earth auger has a winch of 5,000-lb. capacity to speed the setting of poles



This large utility-type body has 10 outside compartments and, inside, has full length seats



A Barco dome-unloading arrangement in the idle position

Tank Car Unloader

10

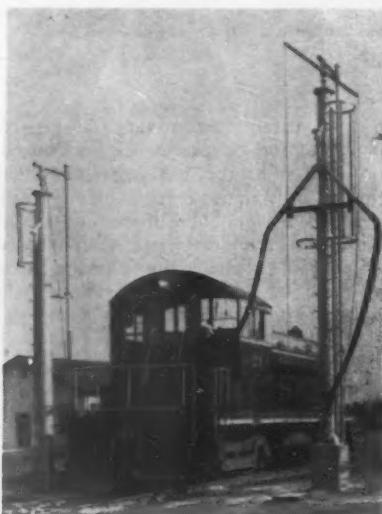
The Barco Manufacturing Company, Chicago, is offering an arrangement of pipe and metal connections for unloading tank cars through the dome to comply with regulations of those states which prohibit bottom unloading. This connection is made up of steel pipe and Barco standard joints, and is attached through the dome to the pipe going to the bottom of the tank car. The arrangement provides flexibility in operation, is easily handled, is durable, and has no lining to rot out and get into fuel lines.

Direct Sanding

11

The Ross & White Co., Chicago, has announced a new device which makes it possible to deliver sand to diesel locomotives direct from storage at ground level, avoiding the need for overhead storage tanks. The control-

ling feature of the equipment is a patented method for releasing air pressure to elevate sand from an air drum at the ground level to the tops of columns supporting the sand-delivery hose. From this point the sand is delivered to the locomotive sand boxes by gravity.



Ross & White's new sanding device eliminates overhead storage tanks and related equipment

Tie Remover And Tie Replacer

12

Templeton, Kenly & Co., Chicago, expects soon to place on the market two new tools designed to facilitate tie-renewal work. One is a device for removing old ties and the other is a companion tool for inserting new ones. Each tool consists essentially of a manually operated jacking mechanism which, while hooked to a rail, exerts horizontal pushing power through a long, toothed rack bar.

Operation of the tie remover re-



The Templeton, Kenly tie remover (above) and tie replacer (below)



quires three preliminary steps—removal of the tie plates, digging out of the ballast at the pushing end of the tie to be removed to a depth flush with its bottom, and loosening of the ballast at the other end with a pick. After this is done the pushing head of the rack bar is placed against the tie end and a hook is placed over the rail. Then a lining bar is placed in the lever socket of the jacking mechanism and jacking is started. At first only one tooth of the rack bar is taken up with each stroke of the lever. But when jacking becomes easier, two teeth may be taken with each stroke until the tie can be removed by hand.

The tie replacer is placed into operation after a new tie is pushed by hand as far as possible into the cavity left by the old tie. The pushing head is placed at the end of the tie and a tooth of the rack bar is hooked over the top of the rail. Then the jack is operated by a lining bar until the tie is in position.

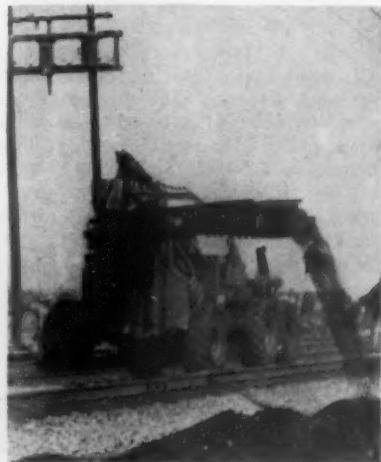
Ballast Remover

13

Pettibone Mulliken Corporation, Chicago, has announced a new off-track machine, known as the PMCO Speed Loader ballast remover, which is designed to dig out and remove fouled ballast from the track shoulders and intertrack areas, depositing the excavated material along the embank-

ment slopes, or into cars or trucks. The machine can be provided with digging mechanisms to produce a cut up to 8 ft. in width and down to 12 in. below tops of ties.

The ballast remover is an adaptation of this company's Trak-Kleener machine, being equipped with a different front-end arrangement to obtain a deeper cut. Alternate manganese dragger-back blades of the digging mechanism have cutting teeth to facilitate easier penetration of hard compacted



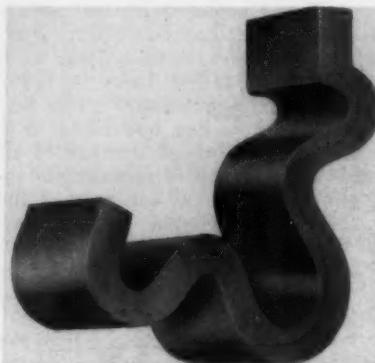
The PMCO Speed Loader ballast remover digs out fouled ballast from shoulders and intertrack areas down to 12 in. below the tops of ties

ballast. The machine is operated by one man and its large pneumatic tires give the unit high maneuverability in crossing over tracks or uneven terrain and in getting into the clear for rail traffic. It is said to operate at speeds varying up to 30 ft. per min., depending upon the condition of the ballast.

Rail Anchor Improved

14

The Woodings rail anchor has been improved both in design and in metallurgical makeup, according to the Woodings Forge & Tool Co., Verona, Pa. The design change consists of a heavier section for the part of the anchor that fits on the rail base. The metallurgical improvements are the result of new manufacturing and heat-treating procedures.



The improved Woodings rail anchor

Submersible Pump

15

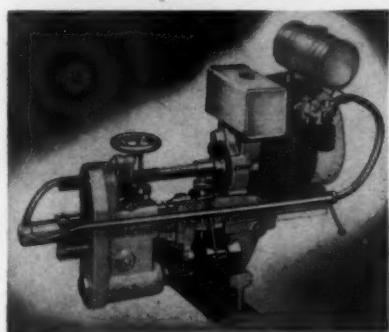
Fairbanks, Morse & Co., Chicago, has announced a new self-priming deep-well pump designed for installation below water level. The unit consists of a motor and a pump assembly encased in a tubular frame. The motor embodies a sealed rotor and stator, and is water lubricated and water cooled. The motor relay and capacitor are located in a control box above ground where they are easily accessible, and may be removed without disturbing the main well installation.



The new Fairbanks-Morse deep-well pump designed for installation below the water level

The pump incorporates accurately balanced impellers with a stainless steel shaft held by high-grade bearing sleeves and rotating on rubber bearings.

The unit can be installed simply by adding the required lengths of drop pipe as the unit is lowered to the proper setting. Because the entire pumping unit operates under water, undesirable motor noises and vibration are eliminated.



The improved Racine rail drill

Improved Drills

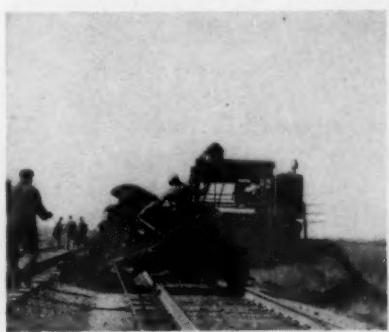
16

The Racine Tool & Machine Co., Racine, Wis., has equipped both its portable rail drill and its portable bond drill with improved quick-acting clamping devices which are reported greatly to increase the speed and ease of mounting the machines on the rail and removing them to clear for traffic.

Ballastex-Screenex Now Self-Propelled

17

A number of improvements in the Ballastex-Screenex combination for reconditioning ballast have been announced by the Nordberg Manufacturing Company, Milwaukee, Wis. For one thing, as an optional feature, self-propulsion has been made available so that the combination can be moved under its own power from one job location to another. For another, the length of the discharge conveyor of the



The Ballastex-Screenex combination is now available with a self-propelling mechanism for moving from job to job

Screenex has been increased to facilitate loading or wasting, and the conveyor mounting has been redesigned to increase ease of handling.

In ballast-reconditioning work the Ballastex excavates fouled shoulder or intertrack ballast and either wastes it to one side or feeds it to the Screenex, which screens the material and returns the cleaned ballast to the tie cribs, the intertrack space, or the shoulders, either individually or divided in any proportion among the three locations. While actually working, the combination is moved by a winch on the Ballastex which winds up a chain anchored to a tie with a special clamp.

Machine for Cleaning Yard Tracks

18

An on-track machine, known as the DSL Yard Cleaner, which removes debris and dirt from tracks and uniformly grades shoulders and intertrack areas, all in one operation, has been announced by the Nordberg Manufacturing Company, Milwaukee, Wis. The key to the cleaning action of the machine is a high-speed impeller equipped with wire-rope cables. As the impeller rotates, the material lying on the ties is swept by the cables to two cross conveyors which carry it to a waste conveyor. The cleaning action of the cables is reported to be so thorough that the tops of the ties and spike heads are completely exposed, but without damage to the ties. The material in the intertrack is fed to the impeller by two ingathering plows, one on each side of the machine.

The waste conveyor has a swing of 180 deg. horizontally and its discharge end can be raised or lowered as necessary. The waste material can either be discharged into dump-body push trucks ahead of the machine on the same track, in which case the machine pushes the cars as it loads them, or it can be discharged into cars up to 10 ft. in height on an adjacent track.

The DSL Yard Cleaner is powered



The Nordberg DSL Yard Cleaner

by a 50-hp. gasoline engine which drives the impeller directly and also provides power for the hydraulic pumps and motors driving the conveyor system and the propelling mechanism. The machine can be removed quickly from the track by means of a hydraulically operated run-off device.

Inserting Crossties

19

Last year Fairmont Railway Motors, Inc., Fairmont, Minn., introduced a machine for removing the old ties in connection with tie-renewal work. The company has now announced a companion machine, known as the W69 Series B tie inserter, for pulling the new ties into place under the rails. In performing this operation the new machine—an on-track unit—utilizes a cable, both ends of which are fastened to a drum. After the machine is clamped to the rails the middle loop of the cable is hooked around the far end of the tie. Power is then applied to the



The Fairmont W69 Series B tie inserter for use in tie-renewal work

drum and the tie is drawn into place.

Before the pull is made, however, the near end of the tie is fitted with a nose plow and the far end with a shoe. Each plow is equipped with a socket which slips easily over the end of the tie. Three plow sizes are available to fit variations in tie dimensions. The tie shoe is clamped to the other end of the tie with the aid of a hand wheel, and can be adjusted to fit any size of tie. The shoe is grooved to hold the cable in place and is equipped with a handle for the convenience of a workman who guides the tie as the pull is made.

The cable drum is driven by a reversible hydraulic motor through a differential gear-type speed reducer and a jaw clutch. A two-cylinder, four-cycle air-cooled engine drives the hydraulic pump. The machine moves from tie to tie on double-flanged wheels actuated by hydraulic rams. The rail clamps are also actuated by hydraulic rams. While the tie is being pulled, three rollers under the machine help to guide it into position. One of the rollers, the middle one, also acts as an idler drum for the cable. The cable passes from the power drum down around the roller and then out under the rail to the end of the tie. Practically a straight line pull is thus provided.

The machine is equipped with three manually lowered set-off wheels for use when the machine must be removed from the track. It also has large eyebolts for lifting if a crane is available. When the machine is set off between crossings, an anchor chain is hooked to the rail to prevent it from running too far down an embankment. With the cable anchored to the far rail, the machine can easily pull itself back to the track.

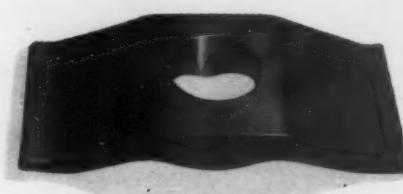
Sperry Detector Cars 20 Are Improved

All units in the Sperry fleet of detector cars are now giving a 200 per cent better performance in detecting transverse defects in those sections of rails extending from 0 in. to 12 in. from the ends of joint bars, according to Sperry Rail Service, Danbury, Conn.



Sperry detector cars have been improved to give better performance in detecting transverse defects in the sections of rails adjacent to joint bars

The improved performance is due to improvements in all components of the cars plus the addition to each car of a new multi-unit electronic device which gives the operator a visual aid in interpreting the indications received on the tape while testing through joint areas.



The improved Verona Fixed-Tension Triflex spring

Improved Triflex Spring 21

The Woodings-Verona Tool Works, Verona, Pa., has made a design change in the Verona Fixed-Tension Triflex spring. The top contour of the spring has been modified to provide a flat surface for the nut. As a result, according to the company, the strength, the free travel and reaction of the spring have been increased.

Machine for Cleaning 22 Shoulder Ballast

A shoulder ballast cleaner, called the Super Mole, which has a much greater cleaning capacity than the standard Mole, has been announced by the Railway Maintenance Corporation, Pittsburgh, Pa. Tractor mounted, the machine incorporates a digging head similar to that of a standard Mole, from which the fouled ballast travels upward and backward on a conveyor to a vibrating screen which separates the dirt from the ballast. The clean ballast is discharged back to the shoulder at the rear of the machine and the dirt is discharged by a spoils conveyor which can be set at any angle



The Super Mole shoulder ballast cleaner

horizontally and at angles up to 30 deg. vertically if loading of the dirt is desired. The machine is 20 ft. long and 8 ft. 8 in. high and has a digging width of 4 ft. 8 1/2 in.

The travel speeds of the tractor range from 1.5 m.p.h. in first gear to 5.4 m.p.h. in fifth gear. Cleaning speeds range from 1,200 ft. per hour up to 4,235 ft. per hour. Under heavy digging conditions, of course, the machine is used in the lower speed ranges.

The present pilot model is being used in conjunction with a tractor and plow which turns the ballast at least 24 hours ahead of the cleaning operation. This is done to permit the ballast to drain and dry out before cleaning, with the result that a better cleaning job can be accomplished.

The Super Mole is operated by hydraulic controls. It is said that it can be easily maneuvered in and out as necessary to keep the digging edge against the tie ends at all times. According to the manufacturer, it can also be maneuvered easily around obstructions, across road crossings and over rails to operate on the other side of the track. The machine is operated by one man, but another man sometimes works behind it to adjust ballast distribution and the dirt-disposal conveyor when necessary.

Carriage for Setting 23 Track Spikes

A carriage designed to make easier and faster the work of setting track spikes in connection with rail-relaying operations has been announced by Fairmont Railway Motors, Inc., Fairmont, Minn. The unit, known as the W79 Series A spike-setter carriage, consists of a spike hopper, 14 in. square by 25 in. high, and a low tractor-type perforated-steel seat. The hop-

per and the seat are mounted, one at each end, on a length of steel tubing with two roller-bearing double-flanged wheels which run on the track rail being spiked. Balance is provided by a tubular-steel arm extending across the track and terminating in a third wheel which runs on the opposite rail. The third wheel is insulated and turns on Oiltite bearings.

The third-wheel arm is held in position by a removable pin, and may be mounted on either side of the main frame member. Hence, the unit can be worked on either rail and in either direction merely by changing the arm from side to side as necessary.

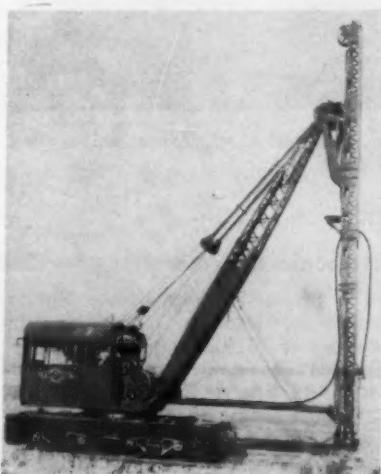
In operation the track spikes are always within easy reach of the workman who sets the spikes, as the spike hopper has an opening in the bottom of the side nearest him. In moving from tie to tie the workman pushes the outfit with his feet. Weighing 125 lb. complete, the carriage can be easily removed from the track with the aid of a handle on each side of the hopper.

Diesel Pile Driver

24

The Browning Crane & Shovel Co., Cleveland, Ohio, has announced a folding pile driver attachment for the Browning Torqflo diesel locomotive crane. The pile hammer can be powered by a self-contained steam generator mounted on a trailing car. Operating automatically, the steam generator burns the same fuel as the diesel engine of the crane and supplies steam to the hammer through flexible hose and piping. The control valve is mounted on the control stand in the crane cab.

It is said that the folding leads of the pile driver can be quickly set for driving either vertical or batter piling. During the driving operation the leads and the crane boom form an integral unit which is said to be as rigid as the truss-type pile driver. The leads can be lowered as the crane travels under



New pile driver attachment for the Browning Torqflo crane



The Fairmont W79 Series A spike-setter carrier

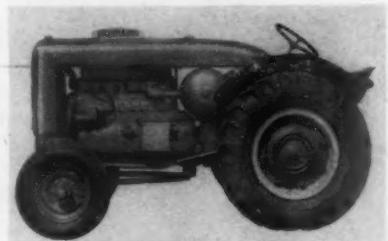
its own power in either direction. Thus rapid clearing of the track for passage of trains can be accomplished when necessary. The Torqflo drive of the crane is said to assure a fast pickup and getaway.

The folding pile driver leads can be quickly detached from the crane by lowering them over a flat car and removing the pins from the lead hangers.

Multiple-Purpose Tractor-Compressor

25

Schramm, Inc., West Chester, Pa., has developed a multiple-purpose unit, known as the Pneumatractor, which can be used either as an air compressor for operating pneumatic tools, or as a tractor. In the power plant of the



The Schramm Pneumatractor self-propelled air compressor

machine the compressor cylinders and the power cylinders are integrally cast and balanced in the same cylinder block.

The auxiliary tractor attachments available for the unit include a snow plow, a rotary brush, a front-end loader, front and rear winches, a backfill blade, and a posthole auger. Also available for rear mounting on the machine are a number of pneumatic attachments, including a rock drill, a concrete breaker and a backfill tamper. The Pneumatractor can be furnished in compressor capacities of either 60 cu. ft. per min. or 105 cu. ft. per min.



The Lufkin "Leader" steel tape with a maroon-colored Vinylite-covered case

Steel Tape—Vinylite Case

26

The Lufkin Rule Company, Saginaw, Mich., is now offering a chrome-clad steel tape, known as the "Leader," with a maroon-colored Vinylite-covered case which is said to resist water, stain and scuffing. The case has a roller-type throat, an inset flat stainless-steel edge band, and an attractive name plate. The winding mechanism is nickel-plated and has a folding flush handle opened by a push pin. The tape is available in lengths of 25 ft., 50 ft., 75 ft. and 100 ft.

Ballast Cleaner

27

The Athey Products Corporation, Chicago, has introduced an off-track ballast cleaning machine, mounted on a Caterpillar D-4 tractor, which has loading speeds ranging from 0.3 m.p.h. to 0.6 m.p.h., and which can travel at speeds up to 5.4 m.p.h. The machine is equipped with hydraulic controls and can be operated by one man from a high seat which affords him good visibility in all directions. The unit is 32 ft. 4 in. long, 5 ft. 10 in. wide and 8 ft. 10 in. high.

For cleaning, the ballast is first



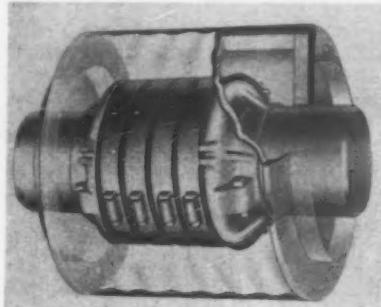
The Athey ballast cleaner picks up the windrowed foul ballast, screens it and deposits cleaned stone against tie ends while wasting the dirt along the embankment

windrowed, after which, if possible, it is given time to aerate. Then, with its guide shoes flush against the tie ends, the ballast cleaner picks up the fouled ballast, carries it over a paddle wheel onto a conveyor belt and discharges it onto a 4-ft. by 7-ft. shaker screen having $\frac{3}{4}$ -in. openings. Waste material is discharged away from the track, and the cleaned ballast is placed back flush against the ties in a uniform windrow.

Expansion Joint

28

The Ric-Wil Company, Cleveland, Ohio, now offers a stainless-steel bellows-type permanent expansion joint in conjunction with its prefabricated conduit systems. The new expansion joint is said to result in considerable savings by avoiding the cost that would otherwise be involved in constructing a manhole merely to house expansion joints and anchors. They are available in sizes from 3 in. to 16 in., for pressures up to 300 p.s.i., and for temperatures up to 1,600 deg. F. Equalizing rings made of cast iron are used for temperatures below 500 deg. F. and of steel for temperatures in excess of 500 deg. F.



Ric-Wil's new bellows-type expansion joint

Tie Tamper

29

A number of design changes in the Racine unit tie tamper have been announced by the Racine Tool & Machine Co., Racine, Wis. An entirely new carburetion system has been added which is said to assure simple carburetor adjustment and easy engine starting; the guards formerly employed to protect the engine are no longer needed; and the weight of the unit has been reduced to about 55 lb.

The Racine tie tamper is a completely self-contained gasoline-operated unit which imparts a high-velocity hammer



The improved Racine unit tie tamper

blow through a spring and crank assembly. The crankshaft in the upward motion of its operating cycle lifts the hammer by means of the springs. The momentum of the hammer at the top of the crankshaft cycle compresses the springs and the force of the downward drive of the crankshaft is increased by release of the spring compression.

Self-Sealing Tie Pad

30

The Fabreka Products Company, Boston, Mass., has announced that the Fabco tie pad is now available with a coating of a special sealing compound, $\frac{1}{16}$ in. thick, which is reported to bond the tie pad strongly to the tie and thereby prevent the intrusion of moisture or dirt between the pad and the tie. The sealer is applied by the manufacturer in advance of shipment to one side of the pad only—the side to be placed against the tie. The other is left uncoated to permit freedom of movement of the tie plate with respect to the tie pad and thus reduce the intensity of the stresses tending to break the seal between the bottom of the pad and the tie.

The sealing compound is protected during storage and while in shipment by a temporary coating of powdered mica, the bulk of which can be easily knocked off before the pad is installed. The Fabco self-sealing pad is available in the same standard and special sizes as the regular Fabco pad.



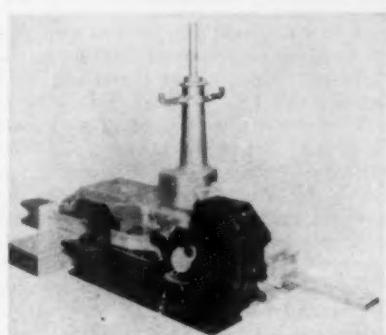
An installation of Fabco self-sealing tie pads

Ultrasonic Detector Car

31

The production rate of the Sperry ultrasonic detector car, as measured in the number of joints tested per day, has been increased 150 per cent, according to Sperry Rail Service, Danbury, Conn. The higher production rate has been made possible by the addition of automatic oiling equipment, improved detecting equipment, and by better handling procedures. This car, which was introduced last year, is used

to locate head-web separations and bolt-hole cracks in rails within joint-bar limits. It utilizes intermittent ultrasonic vibrations which are transmitted into the rail from a hand-held searching unit. Any interruptions to the vibrations due to the presence of bolt holes, bolt-hole cracks or head-web separations reflect a portion of the energy back into the searching unit. The reflections are visually indicated on a screen in such a way that the location, size and type of the defect can readily be determined.



A Model 10 electric switch lock applied to a hand-operated switch machine

Tandem Switch Lock

32

The General Railway Signal Company, Rochester, N. Y., has developed an electric switch lock, known as the Model 10, with a tandem arrangement for locking the hand-throw lever of a switch-stand or hand-operated switch machine in either the normal or reverse position. With the tandem arrangement the lock is coupled with a separate latch stand. A square tube connects the treadle shaft for the lock-latch stand with the treadle shaft for the reverse-position latch stand. Only one lock mechanism is required. Sub-bases and a mounting plate, attached to the lock and the stand by plow bolts, are said to make the entire tandem lock a rigid unit capable of withstanding hard usage and vibration.

The Model 10 tandem lock can be applied to most ground-throw switches in common use. It will accommodate hand-throw levers from $\frac{3}{4}$ in. by 2 in. to 1 in. by 2 in., and may be used on either righthand or lefthand layouts.

IH Tractors Improved

33

Higher power ratings for four of its crawler tractors, namely, the TD-9, the TD-14 A, the TD-18 A and the TD-24, have been announced by the Industrial Power Division of the International Harvester Company, Chicago. The company has also made a number of other improvements in these machines.

The TD-9 is now rated at 40.8 hp.; the TD-14A, 65.9 hp.; the TD-18A,



Improvements have been incorporated in the Sperry ultrasonic detector car, to give it a higher rate of production

89.29 hp.; and the TD-24, 148.4 hp. All the machines incorporate improvements in their combustion systems and all have new operator's seats of a material which is said to stay cleaner, not to absorb grease or oil, and offer greater comfort. In addition the TD-18A and the TD-24 each feature a new full-flow oil filter which filters all oil used to lubricate the main bearings.

Ballast Cleaner Is Improved

34

A number of changes designed to improve performance have been made in the Matisa ballast cleaner, according to the Matisa Equipment Corporation, Chicago. This machine is a large on-track unit which, by means of a continuous excavating chain threaded beneath the track structure, together with a series of conveyors and screens, digs, elevates and screens the ballast, returning the clean stone to the roadbed and disposing of the dirt clear of the track.



The Matisa ballast cleaner

In making the design changes in the machines, the hoist truck was reinforced and the diameter of the four truck wheels was increased; a safety clutch was added to prevent hoistable breakage in case of overloading; a rewinding device for the hoist cable was installed; the hoist-control sys-



Grading for a new line on the Spokane, Portland & Seattle with two new International TD-24 tractors

tem was improved; a safety clutch for the movable crossbeam spindle was added; the lifting screws for the lower digging chain drive were reinforced; the digging-chain guides were made stronger; the digging chain was reinforced; the chain links were provided with many sharp cutting edges; the diameter of the digging-chain sprocket on the turret was increased to provide longer wear; a more efficient overload safety clutch was added to the digging chain; the capacity of the digging-chain motor was increased to 60 hp.; the design of the turret gear and shafts was simplified; the dirt conveyor was provided with a hand winch which permits raising or lowering the conveyor while in operation; the screening surface was increased from 40 to 60 sq. ft.; the rating of the traction motor was increased from 20 to 30 hp.; and a new set-off device was provided.

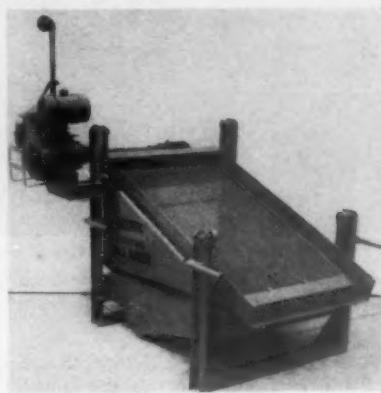
Spreader-Ditcher

35

A new spreader-ditcher model, known as the Jordan Road-Master, has been introduced by the O. F. Jordan Company, East Chicago, Ind. While its overall weight, strength and versatility do not approach the Type A units, it is said to perform the same tasks. It has an all-electric welded underframe, a new type of front plow, manganese steel cutting shoes, telescopic gear rack type wing braces, and sealed box-type main wings with adjustable ballast sections and ditch or spreader sections. The operator's control room is insulated and contains late design manifolds.

Plow wings are provided with a hinged-type nose, and either side of the plow may be extended to permit the unit to operate in single or double-track positions. The extended double-track position is considered to be advantageous in snow-removal work in classification yards or other multiple-track territory; all snow between the

rails or over the ties, ranging in depth from 6 ft. to 7 ft. can be moved in a single direction to the desired side of the track. The cutting shoes permit operating positions to vary from level with the rail to 5 in. below the ball of the rail.



The Fairmont vibrating sand screen

Sand Screen with Vibrating Element

36

A self-contained outfit for fast and efficient screening of sand, which combines a high-frequency vibrating element with a heavy-duty screen having a high percentage of open area, has been developed by Fairmont Railway Motors, Inc., Fairmont, Minn. The outfit is intended primarily for use in screening sand in connection with grouting operations, although it can be used to advantage for any type of sand-screening job.

The screen is supported in an inclined position above a hopper by four hanger arms attached to a structural steel frame. Each hanger arm has a rubber bushing at each end. An opening at the lower end of the screen permits the rejected material to fall to the ground.

The vibrating element is attached to the upper end of the screen frame. It consists of an integral eccentric shaft turning on two tapered roller bearings and is enclosed in a housing. A single-cylinder, air-cooled engine, governed to a speed of 3,000 r.p.m., drives the vibrating element through a flexible shaft. For safety the vibrator and drive are totally enclosed. The complete screening outfit weighs 380 lb. and can be lifted by four handles, one at each corner of the unit.

Tie-Spacing Machine

37

A new machine designed to straighten and position skewed ties automatically and then to hold them firmly up against the base of rail for spiking, has been announced by the Power Ballaster Products Division of the Pullman-Standard Car Manufacturing Company, Chicago. When used with tie-renewal gangs the machine is expected by the manufacturer to replace at least six men. The power source is a gasoline engine and the various mechanisms are actuated hydraulically. The unit is self-propelled both in moving from tie to tie and in traveling to and from the job site.



The Pullman-Standard tie spacer-holder



The front plow on this Jordan Road-Master spreader-ditcher is hinged to permit the unit to operate in single and double-track positions

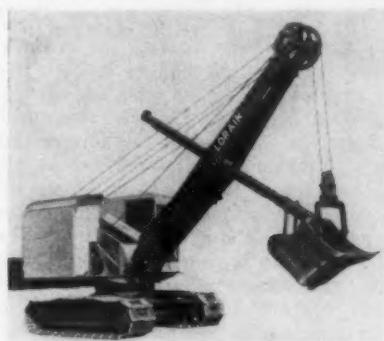
Tamping Machine

38

A number of improvements in the HR track raising and tamping machine have been announced by the Railway Maintenance Corporation, Pittsburgh, Pa. This unit consists essentially of a self-propelled car with a long open frame that serves as the track for two carriage-mounted tamping units, each unit equipped with 16 pneumatic tamping tools (eight for each rail). The machine is equipped with hydraulic jacks at each end. The jacks at the end in the direction of travel raise the track to grade and hold it there while the ties spanned by the machine are tamped by the two tamping units working simultaneously but independently.

The design of the original machine has been changed to permit either simultaneous or independent operation

of the two groups of tampers on each carriage. Thus low spots or joints on one rail can be brought up to the predetermined grade without humping or overtamping the other rail. Also, an indicator has been installed on each carriage which informs the operator of the relative elevation of the rail over the tie being tamped with reference to the general grade. Thus over- or under-tamping is prevented.



The Lorain 50 shovel-crane with hydraulic coupling

Shovel-Crane with Hydraulic Coupling

39

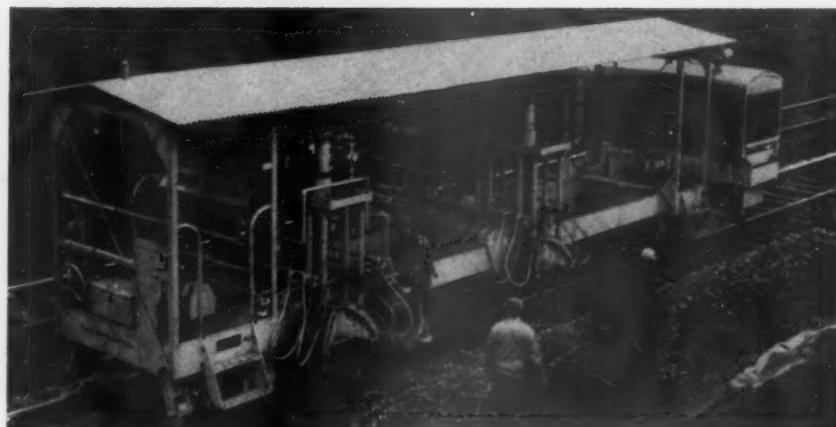
The Thew Shovel Company, Lorain, Ohio, has announced a new shovel-crane in the 1-*yd.* class featuring a twin-disc hydraulic coupling as standard equipment. The machine has been named the Lorain-50 to mark the company's fiftieth anniversary. The hydraulic coupling is reported to prevent stalling of the engine under any digging circumstances, and to provide a means of absorbing digging stresses and strains before they are transferred to the operating mechanism and cables. The coupling is equipped with a "de-clutcher" to permit stopping the machinery without stopping the engine.

The standard power plant of the crane is a Caterpillar six-cylinder diesel engine equipped with a separate gasoline starting engine which is in turn equipped with an electric starter. A six-cylinder Waukesha gasoline engine is available as optional equipment. The Lorain 50 can be furnished with a complete line of interchangeable boom equipment.

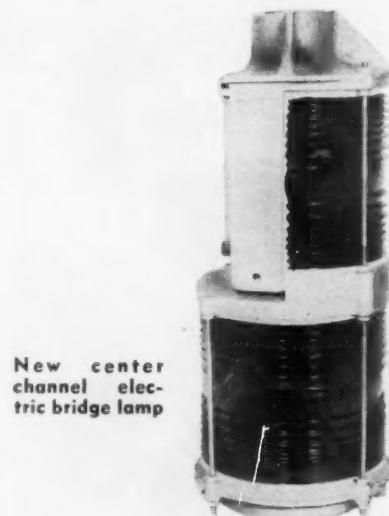
Bridge Lamp

40

The Western Railroad Supply Company, Chicago, has announced a new center channel electric bridge lamp, known as Fig. 9, which is made to conform to the United States Coast Guard Specifications Par. 68.15-20 governing lift-span lights. This lamp is



The improved HR track raising and tamping machine



New center channel electric bridge lamp

furnished with a pivot-type mounting and retriever chain, and can be furnished in cast bronze, aluminum, or galvanized grey iron, as required. The lenses are standard 8-in. fresnels, the upper being a 180-deg. red and the lower a 360-deg. green.

Improved Automatic Tamping Machine

41

The Matisa Equipment Corporation, Chicago, has announced a number of changes, designed to improve performance, in the Matisa automatic tamping machine. This machine is a self-propelled on-track unit with 16 tamping tools which impart both vibration and compaction. A torque-limiting device provides an automatic safeguard against over-compaction.

In making the design changes, the tamping tools were reinforced; the eccentric shaft on the mobile chassis was improved; the drive of the trapezoidal spindles was changed from a duplex to a triplex chain; a damper was added to the lower crossbeam which limits

the vibration of the front end of the machine and also of the untamped track in front of the machine; the brake system was improved; all transmission chains were replaced with standard American types; and the engine clutch was reinforced.



A number of changes designed to improve performance have been made in the Matisa automatic tamping machine

Equipment For Spraying Ties

42

The Binks Manufacturing Company, Chicago, has developed improved equipment for spraying materials of heavy consistency on ties or bridge timbers. The equipment consists of a new air-operated pump, an extension spray gun and connecting hose.

The pump, known as the Model A42, has a cylinder with two pistons, one above the other. A separate tube for the material take-off is connected to the cylinder between the two pistons, making the pump double acting. The lower piston provides power on the upward stroke and the upper piston provides power on the downward stroke. At the same time the upper piston prevents material from reaching the packing or air motor. The pump is equipped with two pressure regulators and gages, one to control air pressure to the air motor and the other to control the atomizing pressure at the gun. The pump is reported



The Binks equipment for spraying materials of heavy consistency

to be powerful enough to force such heavy-materials as cut-back asphalt or emulsions containing various types of fibers or other fillers to the spray gun through 50 ft. of $\frac{3}{4}$ -in. hose.

The Binks extension spray gun, known as Model 25, is especially designed for spraying ties and timbers. It consists of two tubes (one for the material and the other for air) with a nozzle that provides a fan-shaped spray covering a strip 9 in. or 10 in. wide. The gun is 4 ft. long, permitting the operator to stand while spraying.

Track Dressing Machine 43

A self-propelled machine for sweeping and dressing track, which, it is said, will accomplish as much work as at least six men with hand tools, has been announced by the Power Ballaster Products Division of the Pullman-Standard Car Manufacturing Company, Chicago. The machine consists of a cylindrical broom suspended beneath a steel frame with four flanged wheels, and two oscillating shoulder rakes, one on each side. The broom consists of a cylinder studded on its

outside surface with short lengths of hose.

As the machine moves along the track, a chain drive rotates the broom, sweeping all ballast from the tops of the ties. At the same time the shoulder rakes move back and forth across the ballast, scraping excessive ballast from the high spots and filling in the low spots to give the shoulders an even contour. Small following plow-like attachments on each side line and dress the toe of the shoulder. The broom can be raised to clear crossings, turnouts, etc., and the rakes may be adjusted to meet various shoulder-contour specifications. Although designed specifically to follow up the Power Ballaster, the machine can be used as well behind other types of tamping equipment.

ered by one standard six-volt lantern battery. Lantern-to-battery contacts are of the pressure type. Equipped with a parabolic reflector and a glass convex lens, the lamp will transmit a powerful spot light or spread light, as desired. The battery case with its hinged cover is made of 20-gage steel finished with red enamel. The lamp-head and handle are chrome finished.

Improvements in Tractor Attachments 45

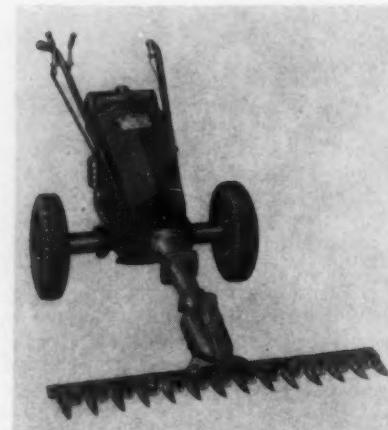
The Gravely Motor Plow & Cultivator Co., Dunbar, W. Va., has made a number of design changes in both the sickle-mower and the gang-mower attachments for the Gravely two-wheel tractor. In the case of the former the drive bracket and the method of attachment were improved to eliminate some of the vibration common to this type of device and to add strength to the drive mechanism of the knife. For the gang-mower attachment a transport bracket has been developed to assist in moving the gangs from place to place, and a better swivel action has been provided to permit the unit to follow the contours of the ground.



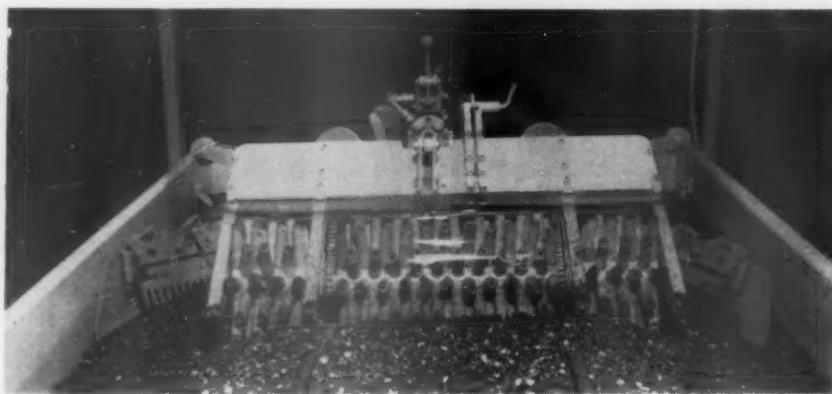
The U-C Lite Big Beam Junior portable electric hand lamp

Portable Electric Hand Lamp 44

The U-C Lite Manufacturing Company, Chicago, has announced a new portable electric hand lamp, known as the Big Beam Junior, Model No. 111. It has a 4-in. lamphead and is pow-



The Gravely tractor with improved sickle mower attachment



Scale model of the Pullman-Standard power track dresser

Lightweight Paving Breaker 46

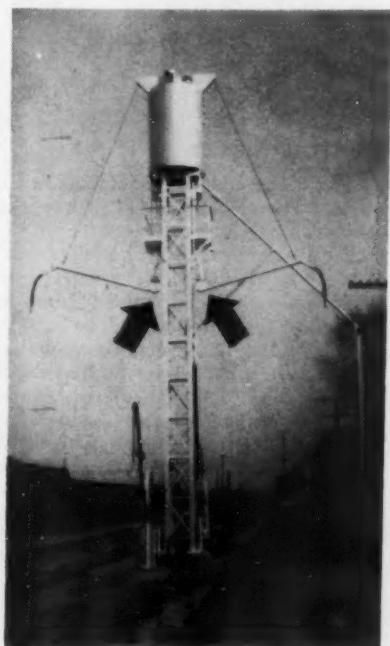
A lightweight (38-lb.) paving breaker, known as the B37, has been added to the line of demolition tools manufactured by the Gardner-Denver Company, Quincy, Ill. The new unit is designed particularly for use where the footing is treacherous. The hammer of the new concrete breaker is of the reversible block pistol type. The use of a tappet, which operates in a renewable bushing, is claimed to minimize wear of the hammer's striking face. The chuck liner is easily replaceable when necessary.

Other features of the tool include a throttle valve lock which works like



The Gardner-Denver lightweight paving breaker

the "safety" on a gun; a low-lift plate valve which is said to minimize air consumption; a quick-acting latch-type steel retainer to hold the tool securely; and an integral oil reservoir which meters oil to all working parts, including the tool shank.



The Berg swing joint permits sand-discharge lines to be swung 180 deg. laterally in addition to vertical movement

Swing Joint for Sanding Stations

47

W-M Corporation, Chicago, announces the development of the Berg swing joint for use with overhead sanding facilities for diesel locomotives. This



The Unit 1014 truck crane

swing joint is connected to, and filled from, the gravity-fed sand-discharge pipe leading from the overhead sand-storage tank, and delivers sand to the spout for top sanding of locomotives. Its construction is said to make it weather and waterproof, and to permit a maximum of 180 deg. of lateral movement in addition to variable movement vertically.

These features are claimed to permit great flexibility of movement with positive assurance of dry-sand flow through the flexible joint of the sand spout. While designed primarily for use with diesel locomotives, it can also be used for steam power.

Sectional Metal Plates

48

Young & Greenawalt Co., East Chicago, Ind., is now furnishing its sectional plates with corrugations 2 in. deep, which give substantially greater section modulus and corresponding strength than the earlier types with shallow corrugations. This company's tunnel liner plates have been improved to develop practically 100 per cent strength at the joints in compression and to eliminate having bolts in shear.



Young & Greenawalt's new tunnel liner plates have increased strength at joints

Truck Crane

49

The Unit Crane & Shovel Corp., Milwaukee, Wis., has announced a new truck crane with a lifting capacity of 10 tons and a capacity of $\frac{1}{2}$ yd. in excavator service. Known as the Unit 1014, the machine is equipped with twin adjustable hook rollers designed to relieve the center post of all stresses and at the same time to reduce wear of the turntable bushing. The weight of the upper structure is supported by four load rollers which ride on top of a machined path.

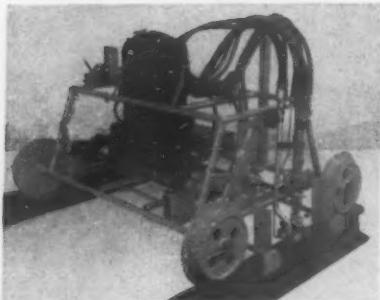
The crane carrier is heavily reinforced to withstand the impacts of heavy-duty operation. The upper structure of the crane has a two-position mounting—a forward position which provides the maximum crane capacity and a rear position which gives the maximum working range in excavating operations. The tandem rear axles of the machine are driven by the truck engine through a direct straight-line drive. A separate engine, either gasoline or diesel, drives the upper structure.

Rail-End Hardening Machine

50

Air Reduction Sales Company, New York, has introduced the Airco rail-end hardening machine, consisting essentially of a heating torch with water-cooled tip, air quench, and control and actuating mechanisms, all mounted on a lightweight frame with four wheels. Air-piston-actuated clamps secure the machine to the track during the hardening cycle, and air-driven motors and pistons are employed to actuate mechanical operations of the cycle.

During the heating period, the vertically mounted torch is oscillated parallel to the track to heat adjacent rail ends simultaneously and to provide a heat pattern most suitable for the results desired. Upon completion of



The Airco rail-end hardening machine

the timed heating cycle, the torch is shut off and a uniform quench is provided by two air-quench tips, producing a hardness within the range recommended by the American Railway Engineering Association.

beams, they are laid side by side, touching at the lower quarters. The upper three-fourths of the unit is $\frac{1}{4}$ in. narrower than the base, and the sides have two grooves so that mortar can be introduced and keyed for cementing the units together. The center hole is $6\frac{1}{4}$ in. in diameter, formed by spinning, and permits the units to be used as ducts for panel heating.



The Corflor hollow-beam units can be used in both floor and roof construction

Hollow Concrete Beams 51

A new precast concrete, steel-reinforced, hollow beam for simplifying building-floor and roof construction has been announced by the Permacrete Products Corporation, Columbus, Ohio. Known as Corflor, these units can span up to 32 ft. for a 35-lb. roof load without supporting beams, and can be placed at the rate of 4,000 to 6,000 sq. ft. a day. Used in floor construction, they can span up to 20 ft. for a 150-lb. load, up to 18 ft. for a 250-lb. load, and 16 ft. for a 265-lb. load. With a 12-ft. span the units will carry 510 lb. per sq. ft. These loadings are in addition to the weight of the units, which is 53 lb. per sq. ft.

In section, the units are 8 in. square and are obtainable in even-foot lengths from 12 to 32 ft. In placing these

Protective Coating 52

A mastic compound, known as Protek-coat, which is manufactured by the Nox-Rust Chemical Corporation, Chicago, is being introduced into the railroad field by Champion Transportation Sales, Chicago. This product has an asphalt base and is said to form a non-corrosive, flexible, waterproof, acid-and-alkali-resistant coating adaptable to a wide range of temperatures. It is claimed to prolong the service life of ties at a fraction of their replacement cost and to protect steel surfaces

from the corrosive effect of brine drippings.

It can be applied by either brushing or spraying, and is said to bond securely to metal, concrete, wood, paper, painted surfaces, or any surface free from oil, grease, wax, loose rust or dirt. It can also be applied to freshly creosoted surfaces. No prime coat is required and one coat of the compound is said to be sufficient to form a flexible, weatherproof surface that dries to a firm, pliable and nonporous coating 10 to 20 times thicker than a coat of ordinary paint. It forms a fire-retardant surface because it does not sustain flame beyond the point of ignition.



The latest model of the Kershaw ballast plow and distributor

Ballast Plow And Distributor 53

The Kershaw Manufacturing Company, Montgomery, Ala., has announced an improved model of its ballast plow and distributor—an on-track unit designed for removing excess center-unloaded ballast from between the rails, pulling ballast into the center of the track, regulating ballast between the rails to any desired depth, and plowing out all ballast between the rails while filling tie cribs.

The unit is equipped with a V-type plow with blades both on the inside and the outside of the V-section. The outside blades are used for plowing ballast from between the rails when the machine is operated in the forward direction. When the unit is operated in the reverse direction the inside blades pull the ballast in, regulating and distributing it in the center of the track. When in operation the machine is towed by a heavy-duty motor car with a four-wheel drive.



Lincoln's new Hidensity welding process produces extremely high-current densities

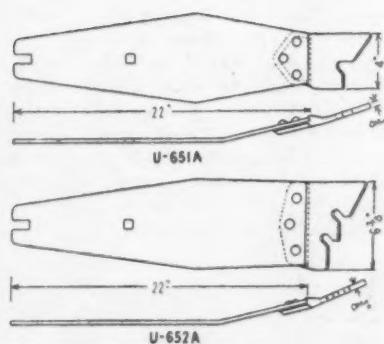
Lincolnweld ML-2 54

A new welding process, employing welding current densities on $5/64$ -in. electrode wire which are said to melt the electrode at speeds comparable to

using 10,000 amp. on a standard 5/16-in. coated hand electrode, has been announced by the Lincoln Electric Company, Cleveland, Ohio. The new process, known as the Hidensity process, is produced through the use of a Manual Lincolnweld ML-2 unit connected to any standard Lincoln SAW 600- or 900-amp. welding generator. Welding currents up to 600 amp. are used with either a 3/32-in. or a 5/64-in. electrode wire.

Extremely high-current densities are produced on a small cross-sectional area of the wire. These create a deeply penetrating arc which in turn allows the use of high welding speeds.

The ML-2 unit consists of a control case, wire reel case, conductor cable and welding drum. The control case contains a wire feed mechanism, consisting of a variable speed d.c. motor geared to drive rolls, plus an on-off switch, inch button, arc-voltage rheostat and current relay. This unit provides all the features of an automatic head and is completely self-contained so that it can be moved to the work independently of the welding generator.



Two new blades for the Jackson electric vibratory tamper

Offers Two New Tamping Blades

55

Two new tamping blades, both applicable either to the hand-held Jackson vibratory tie tamper or to the Jackson Multiple tamper, have been announced by the Electric Tamper & Equipment Co., Ludington, Mich. One of these, known as the U-651A, has a

tip 4 in. wide by $\frac{3}{8}$ in. thick, and is designed particularly for smoothing and spotting in connection with surfacing operations where the track is raised very slightly or not at all. It is reported to be highly efficient in all types of ballast.

The other new blade, the U-652A, has a tip $6\frac{3}{8}$ in. wide by $\frac{3}{8}$ in. thick. It is a combination smoothing and tamping blade and is reported to be especially useful in the lower track-lift ranges.

Hardfacing Welding Rods

56

The American Manganese Steel Division of the American Brake Shoe Company, Chicago Heights, Ill., has announced two new hardfacing welding rods applicable for use by railroads. One of these, known as the HF-6, produces a welding deposit of high-carbon alloy pearlitic cast iron and is recommended by the company for hardfacing tools subject to heavy impact and moderate vibration, such as

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OTHER PRODUCTS

NAME

TITLE OR POSITION

COMPANY

CO. ADDRESS

ZONE STATE
CITY

the shoes of a tamping machine. The company reports that application of the HF-60 rod to the digger teeth of a cribbing machine increased the service life of the teeth from 15,000 to 27,000 ft. of cribbed track.

The other new rod, known as the HF-40, is similar in composition to the HF-60, and is designed for hardfacing tools subject to moderate impact and heavy vibration.

Oil Filter for Air-Cooled Engines

57

The Wisconsin Motor Corporation, Milwaukee, Wis., has developed an oil-filter cartridge, called the Micro-Fine, for use in the lubrication systems of the V-type four-cylinder Wisconsin air-cooled engines. The new filter is reported to keep the lubricating oil free from the dirt, filings and sludge acid that accumulate in the crankcase and thereby to add many hours of service to the life of the engine. A combination of virgin cotton and plastic-impregnated wood cellulose, the filter is said to remove solids of micron size,

measuring less than 0.000045 in., and to hold its own dry weight of solids removed. The thread of the cartridge is machined to fit perfectly on the oil-filter base, and is said to assure a vibration-proof and leak-proof oil seal.

Aluminum Rivet

58

A new aluminum rivet in the large-size range has been developed by the Aluminum Company of America, and is now being offered on an experimental basis for use with heavy-duty aluminum structures. The new rivet is said to have an average shear strength of 38,000 p.s.i. within two weeks after driving, a wide temperature range when driving and good resistance to corrosion when used in recommended practices.

The average shear strength of 38,000 p.s.i. is claimed to be considerably higher than has yet been achieved in the large-size range. Because of the high strength of the rivet and its favorable driving characteristics it can be used instead of steel rivets in such alu-

minum structures as bridges and railroad cars. When used in other aluminum structures, its strength will permit reducing the bulk and complexity of joints and thereby reduce erection costs.

The new rivets are available in sizes of $\frac{1}{2}$ in., $\frac{5}{8}$ in., $\frac{3}{4}$ in., $\frac{7}{8}$ in. and 1 in. When heated within the required temperature range, all the rivets except the 1-in. size can be driven with a hand-operated pneumatic hammer. This can also be done with the 1-in. size where squeeze driven.

New Combination of Weed-Killing Chemicals

59

The R. H. Bogle Company, Alexandria, Va., is offering a new combination of weed-killing chemicals which, in research field tests carried out last year in four southeastern states, is reported to have killed 90 to 95 per cent of such plants as Bermuda grass, nutgrass, broom sage and honeysuckle. The combination consists of sodium arsenite and sodium trichloroacetate.

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43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59				

OTHER PRODUCTS

NAME
TITLE OR POSITION
COMPANY
CO. ADDRESS
CITY ZONE STATE



The first locomotive of the Pacific type built for the British Railways under a program of standardization which will ultimately include twelve separate classes

First New British Standard Locomotive

**A Pacific type for passenger and freight service
first of 12 ultimate classes—25 now being built**

By E. C. POULTNEY
O.B.E., M. Inst. Loco. E.

The four main lines comprising the British railway system became merged in the national undertaking under the direction of the British Transport Commission on January 18, 1948, and the formation of the Railway Executive, appointed to take over the management of the railways, followed in September of the same year. Following upon the decision to standardize the design of locomotives and rolling stock, this matter occupied the first consideration of R. A. Riddles, the executive member for mechanical and electrical engineering.

With the view of determining the performance of express passenger, mixed traffic (i.e., combination passenger and freight), and freight locomotives of modern design as used by the former four main-line railways, a series of comprehensive trials was carried out with selected locomotive classes and types used for such services by the different railways.

These trials,* which extended over several months, and were among the most complete of their kind ever undertaken, established the fact that different locomotives were able to work the class of traffic for which they were intended irrespective of the route. The records of

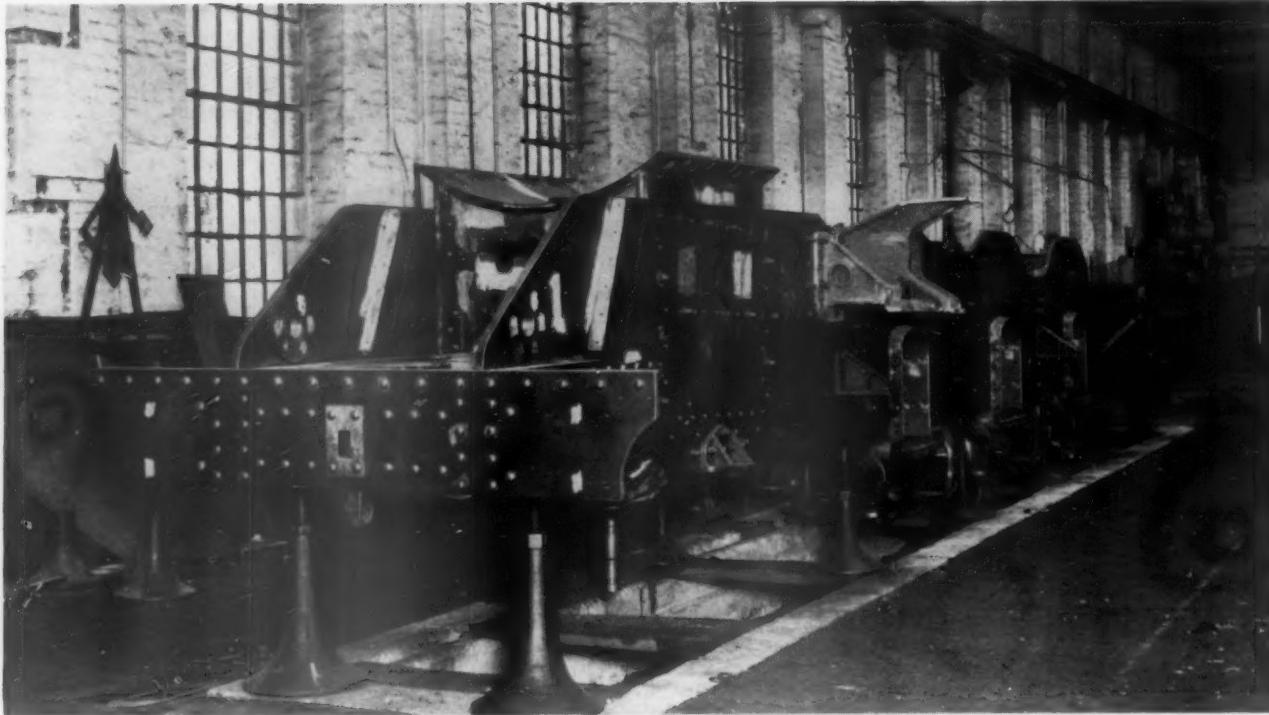
powers developed and coal and water consumptions provided valuable and reliable information concerning the many different engines participating in the test program. The information thus obtained formed a useful basis for the design of the projected standard locomotives.

Twelve Standard Types

There are at present some 19,500 steam locomotives comprising the stock of the previous four main-line railways, while the number of different designs amounts to 400. The aim as now envisaged is ultimately to reduce the number of different designs to 12, built to undertake specific duties. The standard locomotives so far designed cover six different classes; about 160 of these new engines will be built during this year.

So far as the heaviest and most powerful passenger locomotives for high-speed services are concerned, the various railways have already modern engines fully capable of meeting requirements for some time to come. The new standard locomotives have, therefore, been de-

*For a review of the report of these trials, see *Railway Age* of August 27, 1949, page 38.



The plate frames are fabricated by welding and riveting

signed for both passenger and freight services, and have axle loadings graded to suit requirements and road characteristics with a view to extending their route mileage, thus obtaining high availability.

While both four-cylinder and three-cylinder single expansion locomotives have been and still are largely employed with excellent results, particularly in fast passenger traffic, all the new standards will be of the two-cylinder type with cylinders outside the frames.

There will now be built two classes of 4-6-2 locomotives, one—the largest—having an axle load of 45,360 lb., and another, generally similar, having a lighter loading. In like manner there will be two 4-6-0 designs hav-

ing heavier and lighter axle loads and two tank engines of the 2-6-4 and 2-6-2 types. Standard details will be used to the maximum extent throughout.

Though all the locomotives ultimately built will be based on the standards now designed, or projected, it is emphasized that approved improvements may be incorporated as desired. It is not intended that standardization should impede progress in development.

First Standard Locomotive

The first of the new standard engines to be completed, a 4-6-2 of the larger of the two classes, having a total weight, engine and tender, of 316,288 lb. and a maximum tractive force of 32,150 lb., is illustrated. Like all the other new engines, it has been designed by a committee under the supervision and to meet the requirements of R. A. Riddles, member of the executive for mechanical engineering.

The engine is of special interest for the reason that it is the first of the Pacific type ever built for a British railway to have two cylinders only, for, though there are many in service of this type, they are all multi-cylinder engines and of greater power, with a rated tractive force of approximately 40,000 lb. and axle loads of some 50,000 lb.

Copper Firebox Retained

The boiler is of the Belpaire type with riveted joints throughout, working at a pressure of 250 p.s.i. The shell is entirely composed of high-tensile carbon-manganese steel, and the barrel consists of two courses, the second being tapered. The two courses are rolled from 19/32-in. and 21/32-in. plates, respectively, and the outside diameters are 5 ft. 9 in. at the front and 6 ft. 5 1/2 in. at the firebox end. There are 40 large flues 5 1/2 in. outside diameter for the type A superheater and 136 tubes 2 1/8

PRINCIPAL DIMENSIONS, WEIGHTS AND PROPORTIONS OF THE BRITISH RAILWAYS STANDARD CLASS 7 4-6-2-TYPE LOCOMOTIVE

Service	Pasenger and Freight
Weights in working order, lb.:	
Total engine	210,560
On drivers	136,080
Engine truck	38,304
Trailing truck	36,176
Tender	105,728
Engine and tender	316,288
Driving wheel base, ft. in.	14-0
Engine and tender wheel base, ft. in.	58-3
Diameter of driving wheels, in.	74
Boiler:	
Steam pressure, p.s.i.	250
Tubes, no. and outside dia., in.	136-2 1/8
Flues, no. and outside dia., in.	40-5 1/2
Length between tube sheets, ft. in.	17-0
Grate area, sq. ft.	6.8
Heating Surface, sq. ft.:	
Firebox and combustion chamber	210
Tubes and flues	2,264
Total evaporative	2,474
Superheater	718
Combined	3,192
Grate area, sq. ft.	42
Tender water capacity, Imp. gal.	4,250
Coal capacity, tons (2,240 lb.)	7
Height, rail to center line of boiler, ft. in.	9-4
Height, rail to top of stack, ft. in.	13-0 1/2
Total length, engine and tender, over buffers, ft. in.	68-9

in. outside diameter 17 ft. long between the tube plates.

The steam dome contains a Superheater centrifugal steam drier and the throttle in the smokebox is the Superheater multi-valve pattern and is housed in the superheater header on the boiler side of the superheater.

The Belpaire firebox has a wide grate, having an area of 42 sq. ft. The inner firebox is of copper, in line with standard practice. The front of the firebox extends forward into the barrel to form a combustion chamber about 2 ft. long.

All the firebox stay bolts are of Monel metal, fitted with steel nuts inside the firebox. The roof, the longitudinal and the transverse stays are of steel. The combined heating surface is 3,192 sq. ft.

A rocking grate is provided, consisting of 12 rocking sections, 6 each side of the center line. The ashpan is self-cleaning, for which purpose there are three hoppers, one between the engine frames and one outside on each side of the engine. Front damper doors are fitted on each hopper, operated by screw gear and hand wheel on the right side of the footplate. The cylindrical smokebox is carried on a fabricated saddle and is of the self-cleaning type, having plates and wire netting arranged generally as in the Master Mechanic's front end. The blast pipe has a $5\frac{3}{8}$ -in. nozzle.

The boiler is fed through two separate check valves, placed at about 30 deg. on each side of the vertical center line of the front barrel course. The check valves deliver the water onto inclined trays, which deflect it round the inside of the barrel clear of the tubes. There are two injectors. On the right side of the engine is a Davies & Metcalfe Type K exhaust-steam injector having a maximum capacity of 25,300 lb. of water per hour. On the left side is an ordinary live-steam injector.

The boiler is fitted with two directly loaded pop safety valves, mounted on the rear course of the barrel. Fibre-glass insulating mattresses are used for covering the boiler and firebox.

The engine main frames consist of rolled-steel plates

$1\frac{1}{4}$ in. thick, extending from the front buffer beam to a point behind the trailing coupled wheels. The rear end of the framing consists of two 2-in. steel slabs. These are riveted to the main plate frames and carry a fabricated dragbox at the rear end under the footplate.

Main-Frame Spacing

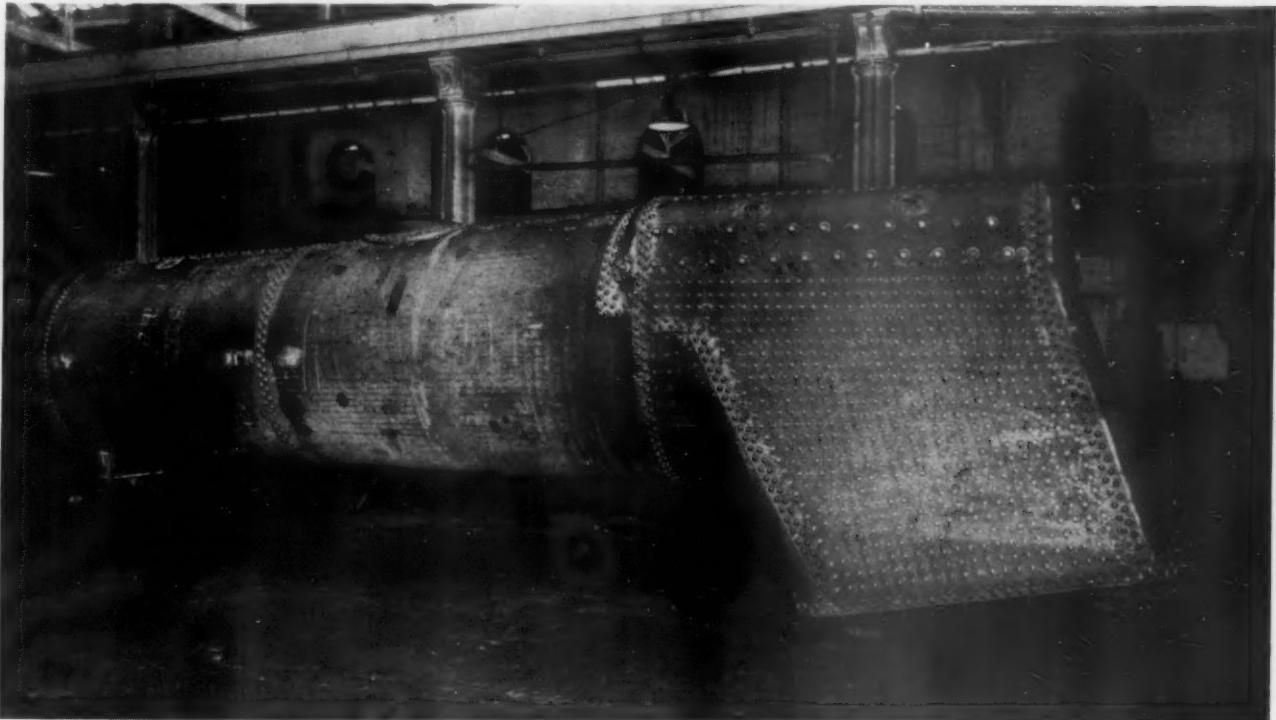
The main frames are spaced 3 ft. $2\frac{1}{4}$ in. apart, thus allowing their center lines to coincide with the transverse centers of the journal-box guide faces and so provide adequate support for the journal bearings similar to that obtained by the bar type of framing. This form of framing is only made possible by the wide firebox, which is carried over the rear extension framing.

The journal-box guides are welded into the side frames and fitted with manganese-steel liners. The frames are braced with vertical and horizontal stretchers and by pin-jointed cross stays attached to the journal-box guides.

The engine axles except for the trailing truck are hollow-bored and the engine and tender are carried on Timken roller bearings, those for the leading truck and the coupled axles being of the nonsplit type. The journal-



Above—The trailing-truck frame is largely fabricated by welding. Below—The boiler has 17-ft. flues, a copper firebox, and a grate area of 42 sq. ft.



box faces, in contact with the guide faces, are fitted with manganese steel liners.

Laminated springs are used for all axles. The springs for the coupled axles are below the driving boxes. There are no equalizers.

The leading and trailing coupled axles have a diameter of $9\frac{1}{8}$ in. at the fit for the inner races of the roller bearings. For the main axle this dimension is increased to $10\frac{1}{8}$ in. The diameter of the coupled wheels is 74 in. They are of the conventional spoked type, and have rims of substantial triangular section to form a good support for the tires. Builtup weights in the wheels balance the revolving and 40 per cent of the reciprocating weights.

The tires for all wheels of the engine and tender are shrunk on and held by small lips on each side of the wheel rims. These lips are turned in the tire, so that their internal diameter is slightly less than the main bore of the tire. When placing on the wheel, the tire is heated sufficiently so that the wheel center will pass through inside the expanded lip diameter. Upon cooling, the tire contracts in diameter and the wheel rim is then securely held between the inner and outer lips. No retaining rings or other fastenings are required.

The four-wheel leading truck carries the front-end weight through side bolsters, and lateral control is by means of double coil springs. Laminated springs fitted in equalizers, the ends of which rest on the axleboxes, take the weight.

The single-axle rear truck has a fabricated steel frame

and the engine weight is taken at three points. One is at the pivot center and the other two are bolsters sliding on pads on the truck frame behind the truck axle. Coil springs control the lateral displacement of the truck.

The cylinders are steel castings fitted with cast-iron liners and the valve-chamber bushings are of the same metal for the 11-in. piston valves. The cylinder dimensions are 20 in. by 28 in. Walschaerts valve gear imparts a full-gear valve travel of $7\frac{3}{4}$ in. The full-gear cut-off is 78 per cent. The valve gear is controlled by a hand-operated wheel and screw reverse gear. The cross-heads are underhung running in three-bar guides. These are not attached to the cylinders.

Cylinder and valve lubrication is by means of atomised oil supplied by a mechanical lubricator. Lubrication of motion pins is by grease nipples and gun.

Cab Supported from Boiler

The cab arrangement is new to British practice. Its structure is carried by cantilever supports, attached to the firebox back plate, and by a diaphragm plate at the dragbox. This arrangement allows freedom for the boiler to move due to expansion. All boiler fittings and pipes are kept clear of the main frames to avoid differential expansion and avoid fracture from this cause. The cab floor plate is extended backwards to form a continuous platform up to the front of the tender. No footplate is required on the tender. A leather-upholstered seat is provided for the engine driver.

The six-wheel tender is of normal design. The coal bunker is designed to be self-trimming, and has been arranged to permit of a good view to the rear, when running tender first. A protection plate, fitted with windows, is provided.

The tank is of welded construction, and has corners of large radius to facilitate the welding of the plates. The wheels, axle and journal-box assembly is similar to that for the rear engine truck. There is a hand-operated water pick-up gear. External feed-water strainers are readily accessible for cleaning.

Steam brakes apply shoes through noncompensating rigging to the driving wheels and to the tender wheels. The tender also has a hand brake. There is a vacuum-brake ejector and driver's valve for operating the continuous brake on the train. The steam brake can be operated either separately or together with the vacuum automatic brake. The brake power is equal to 54.3 per cent of the engine and tender weight in working order.

In certain respects these new locomotives depart somewhat from conventional British standards and embody features long known in American practice. In designing, attention has been given to ease of access for servicing and repair and to the embodiment of features calculated to increase efficiency in operation and add to the mileage made between repairs. Ample boiler power within limitations imposed by allowable weights and a high degree of interchangeability of parts with other standard designs have been kept in view.

In size and potential power, these locomotives are relatively small compared with those in America. In this connection it must be understood that they are not intended to work the heaviest and fastest services. They are general purpose engines with a high route availability and will operate any normal passenger or freight train of average loading at mean speeds prevailing. It is expected that this work will be accomplished economically, and that mileages run during any given period will compare favorably with respect to availability with other forms of power. The leading dimensions and ratios are given in the table.



CAREFUL HANDLING POSTERS, of which the one reproduced above is typical, are issued periodically by the National Freight Loss and Damage Prevention Committee. The committee has been issuing such posters in black and white for many years, but more recently has been putting them out in colors, with improved subject matter and art work.

GENERAL NEWS

Rail Seizure Plan

"Stinks," Morse Says

White House on side of carriers, senator finds

Senator Morse, Republican of Oregon, asserted last week that the federal government's railroad-seizure plan "stinks," because it is a "skunky" arrangement—a "farce" and "one-sided" seizure which has put the White House "on the side of the carriers." The senator also indicated his view that the National Mediation Board can't be kept in business much longer, because it has become "window dressing," maintaining procedures which railroad wage cases go through as a "token step" on their way to the White House.

Senator Morse made these statements at March 5 and 7 sessions of hearings in connection with the Senate labor and public welfare committee's investigation of the failure to settle the wage and rules dispute involving railroad operating employees who are represented by the four train and engine service brotherhoods. The railroads, which are being operated by the Army, were seized by President Truman last August in the face of a strike threat posed by the Brotherhood of Railroad Trainmen and the Order of Railway Conductors.

Grand Chief Engineer J. P. Shields of the Brotherhood of Locomotive Engineers was completing his presentation to the committee (see *Railway Age* of March 5, page 60) when Senator Morse made his comment on the seizure arrangement. As the senator saw it, the seizure was a "token" proposition, presenting the "spectacle" of the government not actually operating the railroads nor taking the earnings while paying the owners only a "reasonable" rental.

Carriers "Kept Whole"

The carriers, as the senator put it, are "kept whole" while the employees are "required" to work under conditions prevailing at the outset of the dispute. Senator Morse also referred to the Army as being in the "position of policeman" for the carriers.

Settlement of the government operation transaction on the basis of an exchange of releases, as was done in previous seizures, would be "very accommodating" to the railroads, the senator continued. He added that if there had been a strike the railroads "wouldn't have had any profit at all." He asked Mr. Shields if he thought settlements of disputes would be hastened by legislation under which neither

party could be sure of a seizure's economic results. The B. of L.E. chief thought such legislation would expedite settlements.

Senator Morse's comment on N.M.B. was made as the board's chairman, John Thad Scott, Jr., came forward to make a presentation on behalf of the board at the March 7 session of the hearings. The senator said he wanted the board to prepare for the committee a detailed report of its operations since 1926, showing the cases in which its mediatory efforts were successful and those in which it failed.

Calls N.M.B. "Window Dressing"

In speaking of N.M.B. as "window dressing," Senator Morse said that was shown by the "large number" of emergency boards which have been appointed. He added that it costs thousands of dollars a year to maintain N.M.B., and that such an outlay can't be justified indefinitely in view of the board's "record of failures." He was not critical of the board's present or past members; he thinks the fault is with the Railway Labor Act.

Later on, Mr. Scott told the committee that 72 per cent of all cases coming before N.M.B. since 1934 had been settled at the mediation stage; and only 6 per cent had gone to emergency boards. Mr. Scott's prepared statement, presented on behalf of the board, was a chronological review of developments in the "op" cases since they got under way with service of the B.R.T. and O.R.C. demands on March 15, 1949.

Meanwhile, the committee received at the March 5 session the presentation of President W. P. Kennedy of the B.R.T. A "crude" and "deliberate falsehood" was what Mr. Kennedy said of management's contention that the "memorandum of agreement" signed at the White House on December 21, 1950, was a binding commitment by the four "op" leaders. The agreement, which embodied a settlement worked out by Dr. John R. Steelman, assistant to President Truman, was subsequently rejected by the general chairman of the brotherhoods.

Mr. Kennedy explained that he signed the memorandum "merely to identify it," and also because he felt that he should report the "proposal" to the B.R.T. membership.

He subscribed to a recommendation made earlier by President D. B. Robertson of the Brotherhood of Locomotive Firemen & Enginemen that emergency boards be enlarged to include representatives of the employees and management. Mr. Kennedy would also change the Railway Labor Act to give emergency boards more than 30 days in

which to make their investigation and report; and he would require all emergency boards to "attempt mediation." The so-called anti-strike bill, sponsored in the previous Congress by former Senator Donnell of Missouri, was, in Mr. Kennedy's opinion, "one of the most thoughtless and dangerous bills ever presented."

The B.R.T. president found the "real nub" of the railroad employees' problem to be "the basic conflict between a legal right [to strike] . . . and the factual inability . . . to exercise that right." The "right," he also said, "has, in our modern economy and particularly in wartime emergencies, proved nonexistent."

"It is all too clear that to date no effective solution to that problem has been advanced," Mr. Kennedy added.

As to prospects for settlement of the stalemate "op" disputes, N.M.B. Chairman Scott later told Senator Taft, Republican of Ohio, that it was "hard to say." He added that "in the heart of a mediator, hope never dies."

Interim Rate Plea Before the I.C.C.

"Non-op" wage settlement may modify increase proposal

The railroads have indicated they will ask for an additional increase in freight rates, above the 6 per cent now pending in *Ex Parte 175*, because the recent settlement in the "non-op" wage case will increase operating costs by about \$280,000,000 a year.

This was disclosed by E. H. Burgess, vice-president and general counsel of the Baltimore & Ohio, in summing up the railroad case for an interim rate increase before the Interstate Commerce Commission on March 1. Mr. Burgess, speaking as chief counsel for the roads, told the I.C.C. that the "non-op" settlement imposes an "additional and tremendous load" on the railroads.

"We have already indicated to the commission a desire to file a supplemental petition, although we are not in a position to file it at the moment," Mr. Burgess said. The settlement with the non-operating employees had been announced earlier that day by Dr. John R. Steelman, assistant to President Truman.

These remarks by Mr. Burgess were made at the conclusion of three days of oral argument, during which the roads urged the I.C.C. to give swift

approval of their motion for an immediate 6 per cent rate boost, pending final determination of the petition for a permanent 6 per cent increase. (See *Railway Age* of March 5, page 59, and February 26, page 40.)

Mr. Burgess recalled the comment made from the bench by Commissioner Aitchison earlier in the hearings when the commissioner said he understood the carriers might amend their petition to ask as much as a 10 per cent increase in rates. Mr. Burgess declined, however, to say just how much the amended petition would call for. The pending 6 per cent petition is based on increased costs arising generally out of higher prices, including what it would cost to settle the operating employees' wage cases on the basis of the December 21 "memorandum of agreement" which was signed by the "op" leaders but then rejected by the general chairman of the brotherhoods.

In summarizing his argument for the 6 per cent interim increase, Mr. Burgess told the commission that a

"substantial portion" of recent price increases are not reflected in 1950 railroad earnings, but the full impact of the increases will hit the carriers in 1951. Prices are still "trending upward," he said, adding that the roads cannot expect to absorb ever increasing costs through economical operation alone.

"There seems to be some idea in this case that the railroad industry can do in this economy what no other industry can do—meet increased costs without increasing prices," Mr. Burgess declared.

Increasing Expenditures

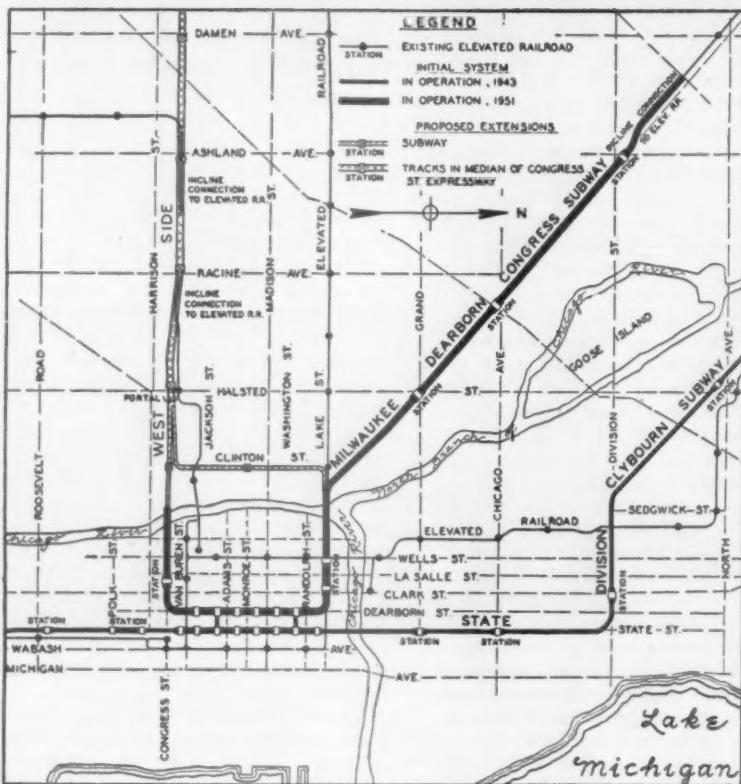
In addition to higher operating costs, the roads must also face "eternally increasing expenditures" to improve their plant and equipment, he continued. He said the carriers in 1951 expect to spend about \$2 billion on new equipment and capital expenditures.

Noting the considerable opposition to the railroad motion that had been shown at the hearings, Mr. Burgess

told the commission that if the interim increase is granted nobody will be hurt. Meanwhile, the railroads "will obtain the money they have to have." He said that without the increase "nobody in the whole country except the railroads" will suffer the consequences.

Presentations at the hearings in opposition to the interim increase were made by several government agencies as well as large numbers of private shippers. The latter included representatives for livestock, grain, coal and fresh fruit and vegetable interests.

Lee J. Quasey, who testified for the National Livestock & Producers Association and four similar groups, told the commission that the livestock shippers are "definitely against any interim increase." He cited the decline in shipments of livestock by rail since World War II, and said this decline has resulted from the increased freight rates over that period. Mr. Quasey said another increase would cause further diversion, and would force producers to dispose of their livestock at points



CHICAGO'S NEW SUBWAY LINE, a four-mile cutoff from the loop district to existing northwest elevated lines, began operations under the Chicago Transit Authority on February 25. New high-speed rapid transit cars, capable of accelerating at the rate of three miles per hour per second, recently delivered by the St. Louis Car Company (upper left), handle all schedules. The interlocking plant at LaSalle and Congress streets (upper right) handles all terminal movements, pending extension of the line further west as shown on the map (left). Its electro-pneumatic switch machines are controlled by a Union Switch & Signal Co. type "UR" machine located in the control room at the center. Welded 100-lb. rail, fastened to steel tie plates by spring clips, is used throughout the subway except where signaling or special work dictate otherwise. All station platforms are of the island type.

Tunnels in the downtown area were constructed by the shield method, resulting in circular tube sections, while most other portions were built by the bench method, giving a horseshoe section. Construction and equipment of the tunnels was carried out under the supervision of the City of Chicago at a total estimated cost of about \$39.6 million.

as near as possible to farms and feed-out areas.

The Pacific Northwest Grain & Grain Products Association, and the Grain & Feed Dealers National Association joined in opposing any increase in grain rates. They asked, however, that in case any increase is granted the commission should "compel the carriers to reestablish markets and gateway relationships existing prior to the several increases," and then apply such increases as may be granted in connection with those adjustments.

Asks "Full Investigation"

C. J. Goodyear appeared on behalf of the Anthracite Institute to oppose any increase in anthracite coal rates without a "full investigation" and a finding that such an increase is necessary. Mr. Goodyear said the anthracite industry in 1950 had a rate of return of less than 2 per cent, about one-fourth the rate of return of railroads in Official territory.

The United Fresh Fruit & Vegetable Association asserted that the carriers' present financial condition does not justify a 6 per cent rate increase. The association told the commission that the roads should do more to increase efficiency and reduce costs; that they should try to cut down the passenger deficit, which must be paid from freight operations; and that they will lose more produce traffic if rates are increased.

Modification of Long Island Plan Suggested by Dewey

"Refinancing and rehabilitation" of the bankrupt Long Island under a privately-run and partially tax exempt "railroad redevelopment corporation" in lieu of outright ownership and operation of the railroad by a public authority has been proposed to the legislature of New York state by Governor Thomas E. Dewey.

CAR SURPLUSES, SHORTAGES

Average daily freight car surpluses and shortages for the week ended March 3 were announced by the Association of American Railroads on March 8 as follows:

	Surplus	Shortage
Plain Box	0	26,884
Auto Box	6	360
 Total Box	 6	 27,244
Gondola	35	4,927
Hopper	6	2,012
Covered Hopper	0	52
Stock	718	5
Flat	0	1,484
Refrigerator	320	2,061
Other	151	43
 1,236	 37,828	

Surpluses, the A.A.R. said, were the lowest since October 1948, while shortages were the highest since the week ended September 2, 1950.

The governor's proposal, it is understood, calls for amendment of the pending bill for creation of a Long Island Rail Road Authority so as to make it the primary purpose of the authority to assist in reorganization of the railroad under the redevelopment plan. The authority would be empowered to acquire and operate the railroad itself only as "a last resort" in the event reorganization and investment of necessary new capital under private ownership proves impossible.

The proposed redevelopment corporation, as reportedly envisioned by Governor Dewey, would have limited power to fix its own rates, and would be exempt from state taxes and from 60 per cent of local real estate taxes as presently assessed. Any profits over and above a certain amount, however, would be shared with the state in lieu of taxes.

Meantime, the Nassau County Transit Commission, which has consistently opposed any increase in L. I. commuter fares, has admitted that some increase is now necessary.

Motor Tariffs Also Too Complex, Alldredge Says

Traffic representatives of industrial organizations, who have complained to Interstate Commerce Commissioner J. Haden Alldredge about complexities of railroad tariffs, have expressed "equal, if not greater, dissatisfaction with the tariffs of the motor carriers." Mr. Alldredge so advised tariff publishing agents of the truckers in a letter dated February 28.

The letter was like one with respect to railroad tariffs which the commissioner wrote on February 9 to chairmen of the three territorial traffic associations (see *Railway Age* of February 19, page 35). Mr. Alldredge is the commissioner in charge of the commission's Bureau of Traffic. He warned the truck-tariff publishers that the commission may give consideration "to the adoption of tariff regulations which will be more stringent than those now in force," unless the motor carriers generally effect "substantial improvements in their tariffs."

D.T.A. Order Controls Port Storage of Export Grain

General Order DTA-2, made effective by the Defense Transport Administration on March 3, established a permit system governing the allocation of space for storage of export grain at United States ports. Under terms of the order, operators of port terminal warehouses are prohibited from storing or handling any grain in bulk unless a permit has been issued by D.T.A.

The permits will be issued upon recommendation of the Department of Agriculture. Effective with the order was a "limited temporary grain port handling permit," issued by Director H. K. Osgood of D.T.A.'s Warehouse and Storage Division. That authorized

the port warehouse operators to store and handle certain grain moved on or before March 10 without the requirement of an individual grain-handling permit.

Mileage Rate on Express "Reefers" Is Increased

The allowance for use of express refrigerator cars will be increased on April 1 from 3 cents per mile to 3.5 cents. The increase was approved recently by member roads of the Association of American Railroads in a vote taken on the basis of freight-car ownership.

The refrigerator cars involved are those of the BP, BR, and BS classifications, of which there are approximately 2,500 in service.

Rules for Self-Propelled Cars Will Be Considered

The Interstate Commerce Commission has instituted an investigation "to determine what, if any, rules and instructions should be prescribed for the inspection and testing of self-propelled units of equipment . . . in multiple-unit service operated by a single set of controls." All Class I railroads have been made respondents in the proceeding which is docketed as Ex Parte No. 179.

Petitions asking that present locomotive inspection rules be extended to include multiple-unit cars were filed with the commission recently by the Brotherhood of Locomotive Engineers and the Brotherhood of Locomotive Firemen and Enginemen. (See *Railway Age* of December 16, 1950, page 53, and February 5, page 68.)

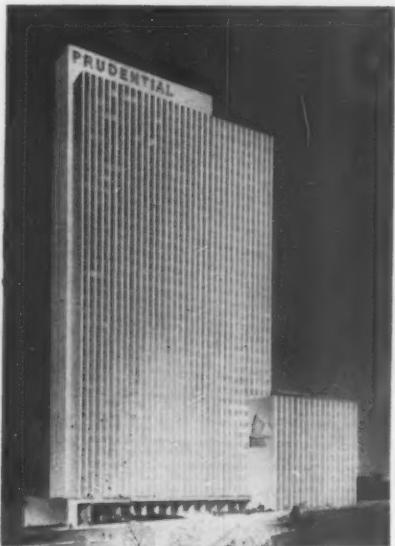
Rogers Reappointment Set for Public Hearing

The Senate Committee on Interstate and Foreign Commerce will hold a public hearing March 14 on President Truman's nomination of Interstate Commerce Commissioner John L. Rogers for a new seven-year term expiring December 31, 1957. (See *Railway Age* of February 19, page 44.)

Knudson Sees "Worst" Traffic Situation Ahead

The traffic situation in this country this year is going to be one of the worst we have ever had, and prospects are that next year will see no improvement. This view was expressed March 6 by Defense Transport Administrator James K. Knudson at an evening session of the Fifth Rail Transportation Institute at American University, Washington, D. C.

Mr. Knudson was commenting on current freight car problems in response to a question by one of the students of the institute. He said that everything possible is being done to relieve car shortages, with the railroads



THE ILLINOIS CENTRAL and the Prudential Insurance Company have announced plans for \$30,000,000 office building (left), over part of the I.C.'s Randolph Street suburban terminal in Chicago. Above is an architect's conception of the 35-story building as it will appear in the Chicago downtown area. The building will house Prudential's new "Mid-America" home office, the name of which is an adaptation of the I.C. slogan, "Main Line of Mid-America." Wayne Johnston, I.C. president, said extensive changes will be made in the suburban terminal's layout and facilities concurrent with construction of the office building and that electric suburban service will be uninterrupted during the construction period. Prudential President Carroll M. Shanks said the insurance company "is eager to commence construction, but it is impossible to forecast when actual work . . . will begin." Detailed architectural plans, he added, will require about one year to complete. The building will contain about 800,000 sq. ft. of floor space, half of which will be used by Prudential, with the remainder being made available for outside renting

having 147,000 cars on order and D.T.A. doing everything it can to get steel to build more cars.

"We have proved there is a bona fide need for freight cars," Mr. Knudson said. He noted that the National Production Authority has cut the freight-car steel allocation to 9,000 cars for May, but said he hopes to get the 10,000-a-month allocation restored for the remainder of this year and for 1952. He said he would like to see car building stepped up to the full capacity of the builders.

The major portion of Mr. Knudson's speech at the institute was devoted to a discussion of the role of D.T.A. in mobilizing the nation's transport system. He reviewed the government's experience in transportation in World Wars I and II, and said the World War I record proves the government cannot operate the railroads as well as private enterprise.

In the second World War, the government developed its "deal-with-private-enterprise" approach to transportation and the idea was a success, Mr. Knudson said. He said one thing to guard against in government operation is the creation of unnecessary bureaucracy which unduly complicates transportation problems.

Turning to his present set-up in D.T.A., Administrator Knudson noted that among the agency's various functions is that of passing upon applications for accelerated amortization in the field of transportation. The D.T.A. can recommend to the Defense Production Administration, which is the certifying authority, that such applications be approved. Mr. Knudson said "over a billion dollars" in applications for accelerated amortization have been filed with D.T.A.

Mr. Knudson said D.T.A., as transportation's claimant agency for scarce

materials, now has 10 programs pending before the N.P.A., including the freight car and locomotive programs. In the field of manpower, he said D.T.A. is seeking to obtain deferments from military service for "essential and critical" employees in transportation.

Senate Group Gets More Time for Transport Report

The Senate recently adopted a resolution extending until June 30 the time allowed its Committee on Interstate and Foreign Commerce for completion of pending transport studies. Such studies include the survey of domestic land and water transportation which was launched by the committee sometime ago and conducted in the previous Congress by a subcommittee headed by former Senator Myers, Democrat of Pennsylvania.

After Mr. Myers' defeat for reelection last November, the parent committee's chairman—Senator Johnson, Democrat of Colorado—took over direction of the subcommittee's work. The subcommittee's report is expected to take the form of proposed transport legislation which is now being drafted by its staff.

Post Office Maneuvers Cut Payments to Railroads

Since the new mail-pay rate structure became effective January 1—providing for separate line-haul and terminal charges and for elimination of payments for return of empty cars—the Post Office Department has undertaken to reduce its mail transportation costs. The department has directed that as much storage mail as possible be loaded in RPO cars and apartments, thus avoiding payment of terminal charges and line-haul rates which would be applicable if the mail were loaded in storage units.

This was disclosed by Herbert B. Brand, manager of mail and express traffic for the Atlantic Coast Line, when he testified March 6 at the reopened hearings in the Railway Mail Pay case (No. 9200). The hearings, which began February 26, were held before Interstate Commerce Commissioner Mitchell and Chief Examiner F. E. Mullen.

On many trains, all storage mail is now being handled in the RPO cars, Mr. Brand said, adding that prior to January 1 this mail moved in storage equipment. He said that in many cases the RPO cars, which were designed as offices for enroute work by postal clerks, are now being used as way cars, with the available RPO space being used repeatedly enroute for local storage mails.

"The substance of these new post office practices at origin and enroute, therefore, is to avoid paying on as much storage mail as possible the terminal charges and one-way line haul rates provided in the new rate structure," Mr. Brand declared.

The department is also using its

Form 5050 to avoid payment of transportation costs, Mr. Brand said. This form calls for the transfer of mail into the RPO car while the train is enroute, and the department does not have to pay the line-haul rate after it is issued. As a practical matter, Mr. Brand said, the mail is never moved, because it would disrupt schedules to make such transfers. As a result the mail moves in the storage units at no cost, he said.

Mr. Brand said the department often uses the empty space in RPO cars twice, first by issuing the Form 5050 and then by loading into the theoretically full space the storage mail picked up enroute.

The result of these new department practices, he added, is that railroads lose out on terminal and line-haul revenues, while their own terminal expenses are increased and train movements are delayed. The latter forces the roads to pay overtime pay and makes their other services less attractive to passengers and other head-end shippers.

Railroad Wins Injury Case in Supreme Court

Affirming a previous determination to the same effect, the United States Supreme Court has ruled again that it is incumbent upon persons seeking to recover under the Federal Employers Liability Act to prove negligence on the part of the respondent railroad. The ruling was embodied in a February 26 decision, announced by Justice Minton, in a case docketed as No. 318, Viola Hall Moore, administratrix of the estate of Louis Lee Moore, Jr., vs. Chesapeake & Ohio.

Mr. Moore was a brakeman working in the C. & O. yards at Richmond, Va. His death, on September 25, 1948, was the result of injuries he received on that day when he fell from a footboard on the tender of a switching locomotive.

A jury in the United States District Court for the Eastern District of Virginia returned a verdict for the administratrix; but the court, notwithstanding that verdict, granted a C. & O. motion and dismissed the case on its merits. That action was affirmed by the Circuit Court of Appeals for the Fourth Circuit, which was upheld by the Supreme Court.

The allegation of negligence was based on a contention that Mr. Moore fell from the tender's footboard when the locomotive made a sudden and unexpected stop. On the other hand, the engineer testified that he saw Mr. Moore fall and made an emergency stop in an attempt to avoid injuring him.

The burden was upon the administratrix to prove that the decedent fell after the train stopped without warning, which was the alleged act of negligence, the court emphasized. It found, however, that "all the evidence" showed that "decedent fell before the train stopped."

Notations on the majority opinion said that Justice Frankfurter would

have dismissed the case on the ground that the review order had been "improperly granted"; and that Justice Reed took no part in consideration or decision of the case. Justice Black filed a dissenting opinion to which Justice Douglas also subscribed.

The dissenters found evidence which they considered sufficient to justify the jury's verdict for the administratrix. The upsetting of that verdict "is a totally unwarranted substitution of a court's view of the evidence for that of a jury," Justice Black said.

P.R.R. to Spend Millions on Automatic Speed Control

Appropriation of approximately \$2 million for immediate installation of automatic speed control on some 1,100 route miles of his company's most heavily traveled passenger lines was announced by J. M. Symes, vice-president — operation of the Pennsylvania, in a press conference at New York on March 2. Subsequent extension of the same system to other Pennsylvania lines may be undertaken at a later date, at a total cost tentatively estimated at approximately \$10 million.

Initial application of the new system, Mr. Symes said, will be made on passenger locomotives operating between New York and Washington, D. C.; between Philadelphia, Pa., and Pittsburgh; between Pittsburgh and Indianapolis, Ind., via Columbus, Ohio, and Dayton; between Baltimore, Md., and Harrisburg, Pa., and between Jersey City, N. J., and Bay Head Junction. Those lines, he added, carry about two-thirds of the railroad's total passenger train mileage, and approximately three-fourths of all its through passengers.

Equipment for these installations is to be made by the Union Switch & Signal Co. at Swissvale, Pa. Subject to availability of necessary materials, production schedules call for initial deliveries within a few weeks or months, "mass production" in from six to nine months, and completion of scheduled installations within a year. Cost of these first installations, Mr. Symes explained, will be comparatively low because all the lines in question are already equipped or are currently being equipped with the automatic wayside block signals and the cab signals which are a necessary part of the entire speed control system, and which represent the bulk of its total cost. Future installations on other lines, he said, will be relatively more costly because of the necessity of installing cab signals as well as the speed control devices. Freight locomotives may also be equipped with speed control at a later date.

The new speed control system, as explained by Mr. Symes, is actuated by coded track circuits, and:

"... supplements the cab signals on the engine and the wayside signals, and automatically slows the train down to required speed if the engineman does not himself do this when the signals so indicate. If the signals indicate a reduction in speed with the warning whistle blowing in the cab and the engineman does not slow down to the required 30 or 15 m.p.h., for example, the electronic speed control devices automatically apply the brakes until the train slows to the required speed. The engineman cannot interfere with these brake applications. If the signals indicate stop and the engineman fails to take action, the devices automatically stop the train. The devices continue to function automatically, keeping the train at the required speed or at stop, until the signal indications become more favorable."

Announcement of the new speed con-

COAL BY PIPELINE?

A bill (S.B. 131) has been introduced into the Ohio State Senate to give to pipelines transporting coal or its derivatives right of eminent domain similar to that enjoyed by pipelines transporting natural gas or liquid fuels. The bill would merely amend pertinent sections of the state's general code to include coal-carrying pipelines in all sections where rights and obligations of other pipelines are described. No specific project or organization to build or operate such a carrier is mentioned in the bill.

The major railroads of Ohio, which are currently opposing the Riverlake coal and ore conveyor belt project (see *Railway Age*, February 19, page 40), are watching progress of the bill, but no immediate action is contemplated at this time.

Almost simultaneously with introduction of the bill came an announcement from the Pittsburgh Consolidation Coal Company, Pittsburgh, Pa., that it plans

to build a demonstration-size pipeline near Cadiz, Ohio, wherein coal would be handled as a slurry, mixed with water. The announcement said special crushing equipment and high pressure pumps—working up to 250 lb. pressure—would be needed for the 17,000-ft. system. Basically, the coal would be crushed after mining, mixed with water to the extent of about 34 per cent for movement through the pipe and later processed with special equipment at the termination point for removal of the water.

The coal company said the project was intended as a final step in its extensive research in this method of transporting coal. It will be full sized in every respect and will be subject to extensive engineering tests. Construction of the system is to begin as soon as weather conditions permit, according to the announcement.

So far, sponsors of the Riverlake conveyor belt have not made any public comment on this new coal hauling scheme.

trol program came just a few hours after the Pennsylvania had pleaded not guilty to 84 separate indictments of manslaughter returned by the grand jury of Middlesex county, N. J., as a result of the death of 84 persons in the February 6 wreck of the road's Jersey City-Bay Head "Broker" at a temporary overpass in Woodbridge, N. J. (See *Railway Age* of February 12, page 124, and February 19, page 34.) That accident, Mr. Symes said at the press conference at which he announced the speed control system, "is regretted and deplored as much as is humanly possible by everyone in the Pennsylvania Railroad's service"; and added that:

"Every effort has been and is being made to provide assistance to the families of those killed and full medical and hospital attention for those injured, and to settle claims fairly and as promptly as possible.

"The railroad has collaborated to the fullest extent with the federal, state and local authorities in probing the cause of the accident. If as the result of these investigations any improvement is, in the railroad's judgment, found warranted, it will be made as promptly and effectively as is physically possible.

"Pending the results of these investigations, the railroad . . . has believed it would not be proper or fair to the investigating authorities or the persons involved to make any statement as to the cause of the accident, other than those made in the formal proceedings."

He vigorously denied any charge that "Pennsylvania people" are "indifferent to human safety, as the recent indictment of their company implies"; and reviewed in detail the railroad's long-time safety record, which he described as "all the more significant" because the Pennsylvania "handles a greater volume of passenger business, and at a greater rate of density, than any other large railroad in the country." He also reviewed its installations of automatic block and cab signals, train telephones and other safety devices, and its policies as to training and examination of engine and train service employees.

It was after this review of Pennsylvania safety practices that Mr. Symes announced the new speed control system, which he described as "the most advanced, and it is believed, the most effective means of insuring maximum safety thus far developed for railroad use."

New Rail Unions Being Organized in Ohio

Because of dissatisfaction with operations within their present unions, railroad operating employees in Ohio are reported to be forming new organizations, intended, spokesmen are quoted as saying, to be "run by the rank and file."

One group, reportedly headed by Gordon Hunter, Baltimore & Ohio yard conductor at Columbus, Ohio, is to be known as the United Railroad Workers, and is limited to operating employees. It is said to center around Columbus, where some 2,500 trainmen are re-

ported to have signed petitions favoring it, but apparently has units under organization also at Newark, Ohio, Pittsburgh, Pa., Wheeling, W. Va., and Indianapolis, Ind.

Another group, the Railroaders Industrial Union, centers around Toledo, Ohio. Its chairman, Glenn E. Henney, New York Central engineman whose home is in Walbridge, Ohio, has said "We are organizing railroad workers throughout the country. Our potential membership is all railroad employees on all railroads." Mr. Henney said his group has no connection with, and "no criticism of" the operating union being formed at Columbus.

The movement for the new unions reportedly began about three weeks ago, primarily because of dissatisfaction with pending wage negotiations between existing unions and railroads. Dissatisfaction with the present organizations apparently, however, goes deeper; a spokesman for the Columbus group, for example, was quoted as saying "I've never had a chance to vote for a president in 12 years. We vote for a local chairman, then a general chairman is picked by the local chairmen. We want a direct vote for officers."

Financial Analysts Hear Railroad Speakers

"Objective thinking and action will do more to remove trucks from the long-haul freight business than any ranting against subsidies," A. E. Perlman, general manager of the Denver & Rio Grande Western, told the railroad forum of the fourth annual convention of the National Federation of Financial Analysts Societies at New York on March 7—a meeting which also included a talk on "Passenger Business—In or Out," by William H. Schmidt, Jr., western editor of *Railway Age*, a paper on "Problems Facing Railroad Management," prepared by Patrick B. McGinnis, partner in McGinnis & Co. and chairman of the Norfolk Southern, and an informal discussion of passenger service by Carleton W. Meyer, director of economics and costs of the Chesapeake & Ohio.

Mr. Perlman, who described the railroads as "diffident—but not decadent," appeared on the program in place of C. L. Patterson, vice-president and general manager of the Lehigh Valley. He devoted the major part of his paper to a discussion of the economies which his company has achieved in maintenance of way work through use of mechanized off-track equipment; and in operation through upward revision of diesel tonnage ratings as a result of careful maintenance based on scientific research. He also emphasized, however, the importance of accurate knowledge of true operating and maintenance costs; the need for improved "communications" between management and employees; and the value of analytical research and better public relations, particularly in reducing passenger service deficits.

Mr. McGinnis' paper—which was read, in his absence, by C. Warren Caswell, also a partner of McGinnis & Co.—covered both freight and passenger operations. In it, Mr. McGinnis reiterated many of the points which he made in an address to the Association of Customers Brokers at New York on December 13, 1950, and which was abstracted beginning on page 14 of *Railway Age* of January 22. Specifically, he declared that — since "the effect of the effort to interest the public in subsidies has, to date, been practically nil"—the railroads should concentrate on presenting, "with no axe to grind," their case for "equal opportunity" with their competitors on such matters as quantity rates, the commodities clause, and the long-and-short-haul clause.

Mr. Schmidt described the passenger "deficit" as the product of the Interstate Commerce Commission's expense separation formula, "which is designed merely to reflect a fair distribution of total operating expenses between freight and passenger service." "There is," he said, "nothing inherently defective about the I.C.C.'s expense separation formula as a formula. The fault lies in the literal interpretation of its findings as a true measure of passenger service."

Since, he continued, the railroads cannot go out of the passenger business, for political and public relations reasons, and since constant talk about deficits is a "handicap—a mental hazard—to passenger traffic officers," the real test of the profitability of the service should be "How much more money do you get out of the passenger business than you would lose if you went out of it?" Since the bulk of the deficit comes from head-end traffic, and since passenger service on most roads is a "by-product," anything, he said, which "it puts in the kitty over and above direct operating costs comprise good useful dollars which ought not to be sacrificed by any hysterical response to the full-cost 'deficit.'

Mr. Meyer's talk was devoted largely to an exposition of the importance of good public relations in cutting down passenger losses, plus the suggestion that passenger costs should be viewed from three standpoints—the expense which can be directly allocated to each individual train, the expense which can be allocated directly to passenger service, but not to individual trains, and the full cost allocated by the I.C.C. formula.

Canadian Equalization Hearings Again Postponed

Public hearings in the Board of Transport Commissioners' inquiry aimed at equalizing freight rates across Canada have been deferred at Ottawa, Ont., for a second time. The board, whose first scheduled hearing was postponed January 15, without receiving evidence, adjourned the sitting until May 15.

Justice M. B. Archibald, chief commissioner, said the adjournment would



U. S. O. LOUNGE AT CHICAGO UNION STATION REOPENED.—In a special 30-min. program which featured a concert by the Fifth Army Headquarters Band, the Chicago Union Station Company, in cooperation with the Travelers Aid Society, formally reopened the station's large U.S.O. service lounge closed since 1947. Following brief talks by Chicago's Mayor Martin H. Kennelly (left photo), Mrs. George Hamlin Shaw, president of



the National Travelers Aid Association, New York, and Major General Albert Smith, deputy commanding general of the Fifth Army, Mrs. Shaw cut a large ribbon barrier at the entrance, thereby opening the lounge for public inspection. Representing the railroads of Union Station during the occasion were (left to right, in right photo): J. C. James, executive vice-president and

general counsel of the Chicago, Burlington & Quincy, who acted as master of ceremonies; Clarence P. Fisher, general manager of the Chicago Union Station Company; Paul E. Feucht, vice-president of the Pennsylvania; S. A. Dobbs, vice-president of the Gulf, Mobile & Ohio; Harry C. Murphy, president of the Burlington, and John P. Kiley, president of the Chicago, Milwaukee, St. Paul & Pacific

give all concerned an opportunity to study the report of the Royal Commission on Transportation, dealing with the whole transportation problem in Canada, which now is being printed and may be tabled in the House of Commons within the next few days.

Both the Royal Commission and the Transport Board have been studying for about two years the question of equalizing freight rates between the various regions of the country.

C. & E. I. Amends Rate Streamliner

Changes in rates between points in Western Trunk Line zone 1 and points in Western territory outside of zone 1 have been made in compliance with a report and order of the Interstate Commerce Commission. This has resulted in changes in tariffs X-166-C and X-168-A. The Chicago & Eastern Illinois has amended its "Freight Rate Streamliner" to show the prescribed changes. Copies of the amendment have been sent to all who received copies of the "Streamliner" direct from the C&E.I.

Industry May Use "DO" Rating For MRO Supplies

The National Production Authority has authorized industry to use the top priority "DO" rating to acquire maintenance, repair and operating supplies. Issued as N.P.A. Regulation 4, the order is designed to help keep present production and service facilities in good repair.

The regulation is permissive in character. No one is required to use the ratings assigned to purchase MRO supplies, but if a firm does use the

ratings it becomes bound by the limitations of the regulation, N.P.A. said. The rating is identified as DO-97—97 being also the number used for identifying the MRO program.

In explaining the new order, N.P.A. said that if a firm elects to use a DO-97 rating even on a single occasion, it must then limit its MRO purchases in accordance with the regulation. Under the regulation these purchases are limited in any one calendar quarter to one-fourth of the firm's dollar purchases of MRO supplies in 1950. If this quota is too small, a firm may apply direct to N.P.A. for an increased allotment.

For the remainder of the first quarter of 1951, companies may take one-half of their quarterly quota, disregarding their MRO purchases prior to February 27, N.P.A. said. MRO orders now outstanding may be given the DO-97 rating also, such ratings to take effect as of March 15.

The agency said supplements to the new regulation will be issued from time to time, making further provisions for MRO materials for industries such as mining, transportation and others, which because of the nature of their operations require special handling of items for maintenance, repair and operations.

I.C.C. Rulings on Private Trucking Are Sustained

Interstate Commerce Commission decisions which drew the line between private and for-hire trucking have been upheld by the United States Supreme Court. The decisions, made by the commission in the so-called Lenoir and Schenley cases, held that trucking operations of Lenoir Chair Company

and Schenley Industries, Inc., were private carriage.

Protesting motor carriers appealed to the courts, the proceeding reaching the Supreme Court as No. 517, Brooks Transportation Company, Inc., A. B. & C. Transportation Company, Inc., M&M Transportation Company, et al. v. U.S., and I.C.C., et al. The court's ruling, announced on February 26, was a "per curia" decision which sustained, without a written opinion, the ruling of a lower court that had upheld the I.C.C.

Free Passes On Railroads Up For Hearing March 22

The Interstate Commerce Commission's investigation of unauthorized free transportation by railroads (Docket No. 30475) has been assigned for hearing March 22 before Commissioner Mitchell at Chicago.

"This hearing is for the purpose of receiving evidence of the practices of western railroads respecting the matters under investigation," the commission said. "A later hearing will be held to receive such evidence as to the practices of eastern railroads."

Duluth, South Shore Road Now All-Diesel Powered

With the arrival of two 1,600-hp. locomotives built by the Baldwin-Lima-Hamilton Corporation, the Duluth, South Shore & Atlantic, on February 28, joined the ranks of Class I carriers operating entirely with diesel-electric motive power.

D.S.S.&A. President Harry S. Mitchell said dieselization of the railroad would permit a speedup of the all-rail shipments of iron ore which the South

Shore is handling from Minnesota mines. He added that the new motive power will enable "faster and better service on transcontinental business in which we participate and will also expedite service to shippers located on our own lines." Receipt of the two locomotives marked completion of the South Shore's equipment modernization program, which was started in 1945.

Gurley Hits Rail Seizure Plan of U. S. Security Board

By its advice to governors of various states to "seize, take or condemn property for protection of the public . . . including means of transportation," the National Security Resources Board, in its book "United States Civil Defense," has headed the railroad network of the nation into chaos and confusion in a national emergency, Fred G. Gurley, president of the Atchison, Topeka & Santa Fe, declared in Chicago on March 5.

Mr. Gurley, speaking in his capacity as chairman of the special railroad executive committee which was appointed to work out the railroad phases of the state's civic defense program (*Railway Age*, January 29, page 40) said in part:

"Fortunately the State of Illinois did not include such provisions about transportation in its civil defense plan. A chaotic condition is in the making, however, by prospective actions of other states, some of which are far removed from Illinois, but which are served by Illinois railroads. These states are considering legislation to accomplish the purpose suggested by the National Security Resources Board, and now promulgated by the Federal Civil Defense Administration.

"By and large, transportation does not and cannot stop at state lines. A transportation organization predicated on states cannot function properly.

Pacts or agreements between adjoining states will not prevent confusion if states not immediately adjacent to Illinois, under

emergency powers sought by bills now being considered, would exercise control over equipment. We believe that state plans about transportation should all be set aside and that there should be a national civil defense plan for transportation.

"We think that as to the railroads, the Association of American Railroads might properly be called upon to formulate a volunteer plan which would include (a) a national setup, (b) a regional setup, and (c) a local setup. Such an organization will be in a position to respond to emergency requirements of any civil defense officer. There would be none of the chaos which will result if each individual state embarks upon a plan to seize, take or condemn property incident to transportation."

Mr. Gurley also pointed to the fact that the Interstate Commerce Commission is already empowered to utilize railroad equipment in an emergency by that portion of the act which reads: "In time of war or threatened war, the President may certify to the commission that it is essential to the national defense and security that certain traffic shall have preference or priority in transportation." He suggested that greater recognition be given to these powers of the commission which makes it a defense auxiliary.

Mr. Gurley's statement was addressed to Illinois State Civil Defense Director Lenox R. Lohr, who has forwarded it with supporting recommendations to Federal Civil Defense Administrator Millard Caldwell in Washington, D. C. In his own communication to Mr. Caldwell, Major Lohr, in support of Mr. Gurley's stand said:

"It would be physically impossible for any state office, even with the support of the National Guard, to seize use of the railroads in the short time available after declaration of the emergency. These complex organizations, operated by trained men with years of experience, would only be thrown into utter confusion by interference of state authorities. Since these carriers and media cross state lines, the action of one state could seriously handicap the civil defense efforts of the other

states. The mere presence of these laws on the books is certain to cause antagonism."

Mr. Gurley's statement to Major Lohr was also signed by all other members of the railroad state civil defense advisory committee — President R. L. Williams, Chicago & North Western; President H. C. Murphy, Chicago, Burlington & Quincy; President T. D. Beven, Elgin, Joliet & Eastern; President Wayne A. Johnston, Illinois Central; Vice-President J. J. Brinkworth, New York Central, and President A. K. Atkinson, Wabash.

Mechanically Refrigerated Milk Planned on B. & M.

The Boston & Maine has ordered from the U. S. Thermo Control Company Thermo King refrigerating-heating units for equipping 11 cars. The mechanically refrigerated cars will be used to haul bottled milk and cream in paper containers from Bellows Falls, Vt., to Boston, Mass., according to a joint announcement by the B. & M. and the Bellows Falls Cooperative Creamery. The refrigerating-heating units were described in detail in an illustrated feature story beginning on page 26 of the December 23, 1950, *Railway Age*. Delivery of the units is scheduled for May 1. Installation will be made at the road's Concord, N. H., shops by B. & M. employees under supervision of the Walsh Body & Trailer Corp., New England representatives of U. S. Thermo Control.

Three \$500 Awards in G.N. "Name the Train" Contests

Three \$500 awards have been announced in the Great Northern's contests to select a name for its transcontinental train to be placed in service this year between Chicago and Seattle, Wash.-Portland, Ore. (See *Railway Age* of November 4, 1950, page 82.) Charles H. Munro, Southern Pacific agent at Oceano, Cal., and Bert Neill, regional supervisor at Los Angeles, Cal., for the Ask Mr. Foster Travel Service, received awards for the name "Evergreen," submitted independently by both contestants. In a similar contest among G. N. employees, the name "Eight Stater," submitted by Wallace E. Davis, stationmaster at Minneapolis, Minn., was voted an award. Under contest rules, the G.N. reserved the right to use or not use any prize-winning names. The name selected will be announced shortly.

Study Proposed to Assure Materials for Freight Cars

Senator Butler, Republican of Nebraska, has introduced in the Senate a resolution, S. Res. 89, which would direct that body's Committee on Interstate and Foreign Commerce to make an investigation "with respect to insuring an adequate supply of materials necessary for the production of 120,



FIRST OFF THE ASSEMBLY LINE of the Chicago & Eastern Illinois' new car building shops at Danville, Ill., this box car paused briefly for the photographer before going into revenue service. At present four box cars a day are

being turned out by the new shops, but this figure will rise as the C. & E. I.'s car building program gets into full swing. Completed late in January, the new shop presently employs some 80 men on a single shift basis

000 railroad cars during the calendar year 1951." The Senate has also received from Senator Case, Republican of South Dakota, a bill, S. 1018, which would amend the Interstate Commerce Act to give the Interstate Commerce Commission emergency powers over equipment rentals.

The latter would permit the commission to use the per diem rate as a device to promote efficiency in utilization of freight cars. The commission recommended that it be granted such power in its latest annual report (see *Railway Age* of January 29, page 16). Similar legislation is proposed in a pending House bill, H.R. 2517, sponsored by Representative Andersen, Republican of Minnesota.

Senator Butler's resolution would call upon the Senate committee to make such recommendations as it might deem desirable for the purpose of "securing" the production of 120,000 new freight cars this year. In offering the resolution, the senator made a statement in which he said that production of railroad cars "is perhaps as vital to our total defense production as any other commodity."

Other senators also discussed the matter, raising questions as to the per diem rate. Senator Butler said he thought the present \$1.75 rate should be changed "so that it would not be possible for certain roads to borrow, at a cheap rate, box cars from other railroads which build them." He also likened per diem to demurrage, saying that "when the demurrage charge is increased the per diem charge ought to go up in line with it."

Senator Case's bill would make "current replacement cost" of freight cars one criterion for the setting of per diem rates. Also, the bill stipulates that "shortage of cars" may be a circumstance justifying declaration of an "emergency," under which the commission could fix a per diem rate without hearing.

Supreme Court Voids State Antistrike Law

Wisconsin's Public Utility Antistrike Law has been held invalid by the United States Supreme Court. The holding reversed the Wisconsin Supreme Court, which had sustained the statute.

The U.S. Supreme Court's decision was based on a finding that the Wisconsin law, which prohibited strikes against public utilities, was in conflict with federal law as embodied in the National Labor Relations Act of 1935 and the Labor Management Relations (Taft-Hartley) Act of 1947. The latter protects the right to strike.

The court's determination was made in Nos. 329 and 438, Amalgamated Association of Street, Electric Railway and Motor Coach Employees of America, et al., and United Gas, Coke & Chemical Workers of America, et al., vs. Wisconsin Employment Relations Board. The decision was an-

nounced February 26 by Chief Justice Vinson, while Justices Frankfurter, Burton and Minton joined in a dissenting opinion.

Freight Car Loadings

Loadings of revenue freight in the week ended March 3 totaled 785,867 cars, the Association of American Railroads announced on March 8. This was an increase of 51,073 cars, or 7.0 per cent, compared with the previous week; an increase of 211,418 cars, or 36.8 per cent, compared with the corresponding week last year; and an increase of 80,315 cars, or 11.4 per cent, compared with the equivalent 1949 week.

Loadings of revenue freight for the week ended February 24 totaled 734,794 cars; the summary for that week, as compiled by the Car Service Division, A.A.R., follows:

REVENUE FREIGHT CAR LOADINGS For the week ended Saturday, February 24			
District	1951	1950	1949
Eastern	134,524	100,574	131,753
Allegheny	150,924	108,675	147,387
Pocahontas	58,464	21,485	56,826
Southern	133,275	107,146	120,107
Northwestern	78,864	65,395	72,315
Central Western	119,448	91,182	104,620
Southwestern	59,295	52,050	55,128
Total Western Districts	257,607	208,827	232,055
Total All Roads	734,794	546,707	688,128
Commodities:			
Grain and grain products	48,278	39,125	39,699
Livestock	6,552	7,168	8,604
Coal	139,180	51,980	145,665
Coke	16,106	9,643	15,054
Forest products	45,838	37,641	35,304
Ore	21,625	9,146	14,346
Merchandise l.c.l.	79,012	72,587	86,092
Miscellaneous	378,203	319,417	343,364
February 24	734,794	546,707	688,128
February 17	740,557	560,068	697,335
February 10	573,163	568,816	699,442
February 3	651,124	612,464	682,143
January 27	784,185	635,934	679,302
Cumulative total 8 weeks	5,709,108	4,678,448	5,611,559

In Canada.—Carloadings for the week ended February 24 totaled 76,156 cars, compared with 73,718 cars for the previous week, and 70,037 cars for the corresponding week last year, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
February 24, 1951	76,156	39,844
February 25, 1950	70,037	26,693
Cumulative totals for Canada:		
February 24, 1951	587,966	279,957
February 25, 1950	528,759	223,277

Maryland Can Tax Revenues From Export, Import Freight

The United States Supreme Court has ruled that revenues earned by Maryland railroads for transportation of traffic moving in foreign commerce are validly included in receipts by which that state's franchise tax on carriers is measured. The court upheld the constitutionality of the tax in two February 26 decisions announced by Justice Douglas.

The levy applies to gross receipts apportioned to the length of lines

within Maryland. In the cases decided by the Supreme Court, it was assailed by the Canton and by the Western Maryland to the extent that the gross-receipts factor included revenues from export and import freight.

The court made its determination in the Canton case (No. 96), and then followed through to make a like ruling in the W.M. case (No. 205). The rulings affirmed decisions of the Maryland Court of Appeals from which the railroads had appealed.

The Supreme Court rejected appellants' contentions that the levy was a state impost on exports and imports of the kind prohibited by the federal constitution. The tax "is not on the goods but on the handling of them at the port," the court emphasized in deciding the Canton case.

"An article," it added, "may be an export and immune from a tax long before or long after it reaches the port. But when the tax is on activities connected with the export or import the range of immunity cannot be so wide."

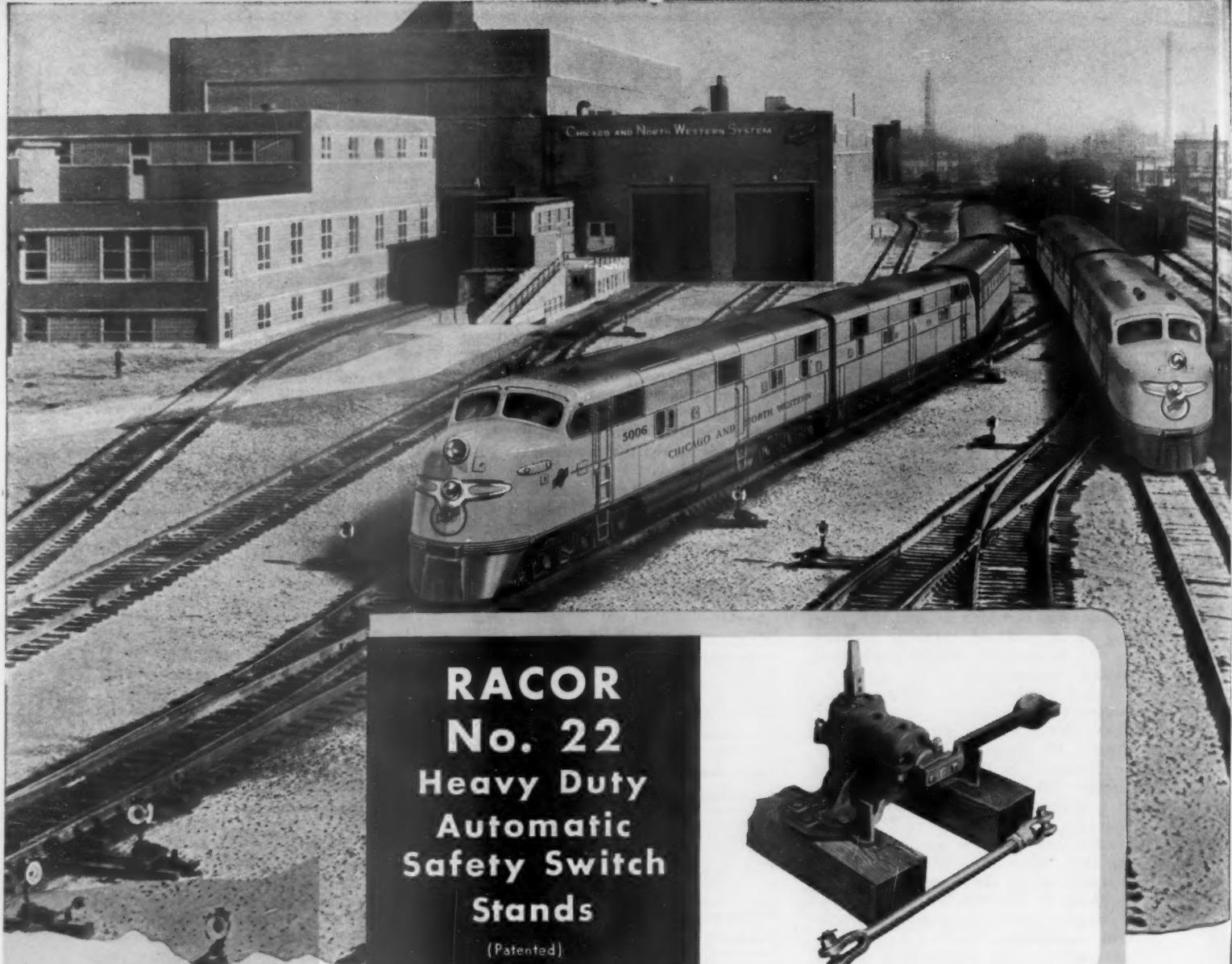
The court found that it did not need to decide whether or not revenues from loading and unloading the export and import freight would be subject to the tax. The question was raised by the Canton, but the court said that the road "merely rents a crane for loading and unloading and does not itself do the stevedoring work. In the W.M. decision it said: "Whether loading and unloading would be exempt is a question we reserve."

The railroads' objections to the tax on the ground that interstate commerce is involved is "not well taken," the court said. "It is settled," it added, "that a non-discriminatory gross receipts tax on interstate enterprise may be sustained if fairly apportioned to the business done without the taxing state."

Justice Jackson filed a separate expression applying to both cases. He did so to "reserve judgment" in the belief that the court's ruling "may be found, upon consideration of matters not briefed or argued, to be untenable." Mr. Jackson suspects that the decision "will cause mischief in quarters we have not considered."

Steel Shortage Points Up Need for Better Markings

Loss of markings from shipments of iron or steel products, particularly from pipe, rods, shafting and similar items, has become a matter of increasing concern to shippers and railroads as a result of the war-born metals shortage. The Freight Claim Division of the Association of American Railroads has circulated a letter to freight claim and operating officers outlining some of the better shipping practices which can be used to reduce delay, correspondence and confusion on "overs" and "shorts." Among them are: Use of water-proof paint or paint sticks; use of stencils to insure legibility; use of linen or cloth tags with



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most complete line
of track specialties

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SWITCH STANDS**

**VERTICAL
SWITCH RODS**

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SWITCH POINTS**

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STEEL CROSSINGS**

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GUARD RAILS**



RACOR No. 22 Heavy Duty Automatic Safety Switch Stands

(Patented)



The Chicago and North Western Rail-
way's New Diesel Shop at Chicago.

**Reduce emergency man hours and repair costs--
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Costly delays and expensive repairs are eliminated in busy turnouts often required when rigid stands are trailed. Investigation by economy minded maintenance officers will reveal substantial savings by using Automatic Switch Stands in yards where stands are frequently run through. Racor No. 22 Heavy Duty Automatic Safety ADJUSTABLE Switch Stands operate either manually or automatically and target and lamp rotate with switches however thrown and always indicate the true position of the switch points. Adjustment to fit slight variations in the throw of switches is provided by a heavy 1 3/4" diameter adjustable crank eye. During automatic operation the handle remains stationary. Write for descriptive literature.

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metal eyelets, and placement of such tags with ends under cloth or burlap bindings; use of tin tags — in some cases two to a bundle, and use of shellac over markings to preserve their legibility.

The division said efforts are being made through the American Iron & Steel Institute to have shippers show on bills of lading the size, number of pieces in bundles, marks or brands, and end colors or any other identifying marks which would assist in over and short matching. Freight agents should be careful to provide detailed exception reports giving specific facts as to weight, size and nature to facilitate identification of stray shipments, the letter said.

D.T.A. Cancels Order On Trucking Priorities

The Defense Transportation Administration revoked as of March 1 the order it issued February 6 to require for-hire motor carriers to give preference and priority to freight shipments for the armed services, the Atomic Energy Commission, and the U.S. mail service. The order, General Order DTA-1, was issued during the strikes of "sick" railroad switchmen.

Bills in Congress

Bills introduced in Congress since the latest previous listing in *Railway Age* of February 19, page 38, include several of interest to the railroads. Those proposals and their sponsors are:

Introduced in Senate

S.825, to provide a transcontinental superhighway with alternate sections (Kilgore, for himself and Neely, both of West Virginia).

S.941, to amend the Railroad Retirement Act to provide for retirement of individuals without regard to age after 40 years of service (Kefauver of Tennessee).

Introduced in House

H.R.2422, to amend the Railroad Retirement Act to provide, for certain individuals who have completed 30 years of service and attained the age of 60, minimum annuities equal to one-half the average compensation received by them during their five highest years of earnings (O'Hara of Minnesota).

H.R.2423, to amend the Railroad Retirement Act to permit retirement at age 60 after 30 years of service (Priest of Tennessee).

H.R.2460, to amend the Civil Aeronautics Act (Beckworth of Texas).

H.R.2466, to amend the Federal Airport Act to provide additional financial assistance to municipalities and other political subdivisions for their airport development projects (Reams of Ohio).

H.R.2533, to amend the Railroad Retirement Act to increase annuities and pensions, to permit retirement regardless of age, and to permit payment of widow's insurance annuities regardless of age (Golden of Kentucky).

H.R.2536, to approve the United States-Canada agreement for construction of the St. Lawrence seaway and power project (Roosevelt of New York).

H.R.2688, to amend the Railroad Retirement Act to provide, for certain individuals who have completed 30 years of service and attained the age of 60, minimum annuities equal to one-half the average compensation received by them during their five highest years of earnings (Granahan of Pennsylvania).

H.J.Res.159, to approve the United States-Canada agreement for construction of the St. Lawrence seaway and power project (Potter of Michigan).

New York Central, the Erie and the Delaware, Lackawanna & Western.

Each year about 1,000,000 tons of crude rubber, cocoa beans, coffee and tin, the complaint said, which normally would move from shipside to railroads on railroad lighters, or in chartered floating equipment, are being trucked through city streets to the detriment of established harbor carriers and the port itself.

ORGANIZATIONS

The Allegheny Regional Advisory Board will hold its 25th anniversary meeting in the Urban Room, William Penn Hotel, Pittsburgh, Pa., on March 22, starting at 9:30 a.m.

All members of the Chicago Chapter of the Delta Nu Alpha Transportation Fraternity will be given the official initiation ritual at the fraternity's next meeting on March 15. The members will hear an address by M. P. Hilton, registrar of the College of Advanced Traffic, entitled "Tolerances." The meeting will take place in private dining room 17 on the traffic club floor of the Palmer House, starting at 7:15 p.m.

A forum luncheon of the Traffic Club of New York will be held at the Biltmore Hotel on March 20.

The New York Railroad Club will hold its annual electrical night on March 15, at 8 p.m., in the auditorium —Engineering Societies building, 33 West 39th street, New York. R. A. Williamson, manager of the rolling stock division of the General Electric Company, Erie, Pa., will speak on "Gas Turbine Electric Locomotives." His talk will be preceded and introduced by a prologue and sound picture just produced by G.E., illustrating the contribution of the electrical industry to development of railroading in the U.S.

The 84th regular meeting of the Pacific Coast Transportation Advisory Board will be held at San Francisco, Cal., on March 15 and 16, in the Bellevue Hotel. This will be the annual meeting for election of officers. Robert A. Bayer, editor, Traffic World, Chicago, will be guest speaker at a luncheon on March 16, sponsored by the Pacific Traffic Association of San Francisco; his subject will be "Transportation and the National Emergency."

James K. Knudson, director of the Defense Transport Administration, will be guest speaker at a special luncheon to be held on March 14 in connection with the Ohio Valley Transportation Advisory Board's regular meeting on March 13 and 14 at Columbus, Ohio. The Columbus Transportation (Continued on page 102)

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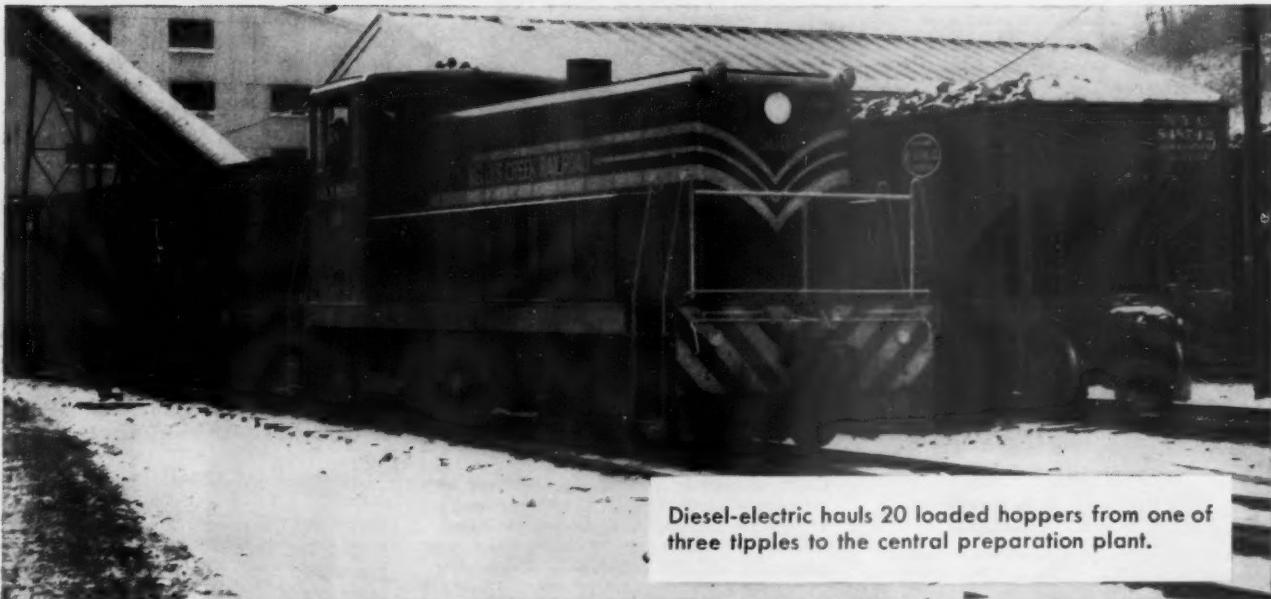
**TWO G-E 70-TON DIESEL-ELECTRICS
ARE PROVING PREDICTED PERFORMANCE
FOR KELLY'S CREEK RAILROAD**

With costs skyrocketing and high production urgent, Kelly's Creek Railroad is delighted with the high availability and low cost of operation of its two G-E 70-ton 600-hp diesel-electric locomotives.

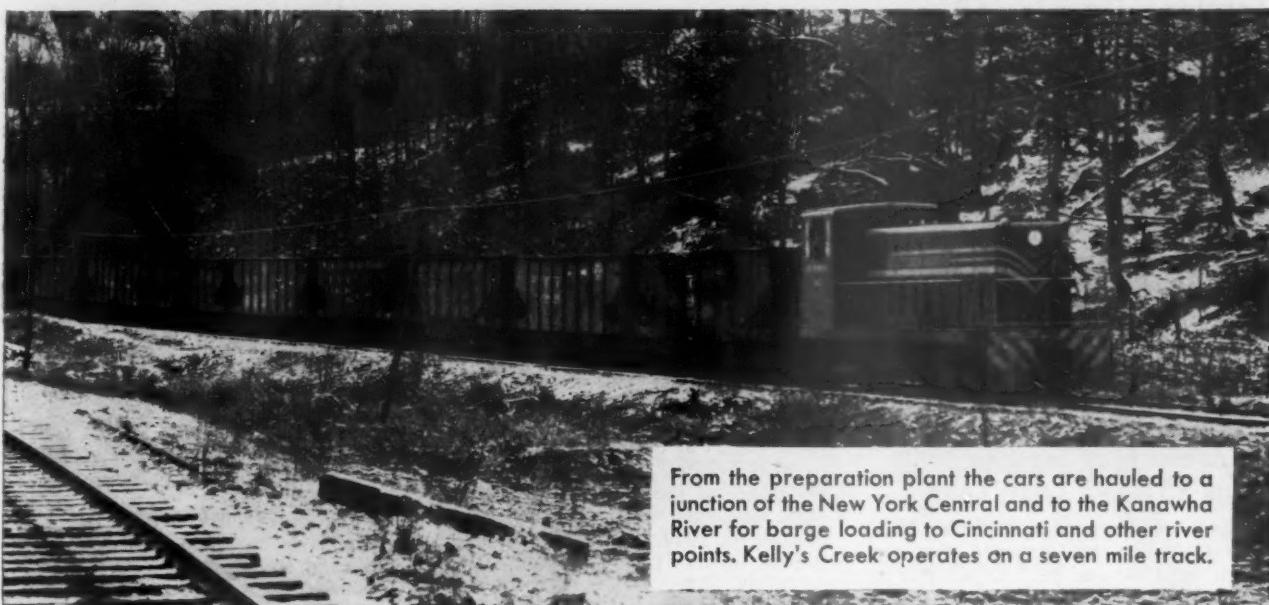
W. H. Warner and Co., Inc. of Cleveland, Ohio operates this Railroad in conjunction

with its coal mines at Mammoth, W. Va.

For over a year and a half these diesel-electrics have been available 95% of the time. Simplified maintenance and servicing requirements have made this possible. Progressive repairs have eliminated long shopping periods for classified repairs.



Diesel-electric hauls 20 loaded hoppers from one of three tipplers to the central preparation plant.



From the preparation plant the cars are hauled to a junction of the New York Central and to the Kanawha River for barge loading to Cincinnati and other river points. Kelly's Creek operates on a seven mile track.

- Other important advantages to Kelly's Creek from these locomotives are:
- Reduced shop outlay
 - Less wear on roadbeds and rails
 - 70% decrease in parts inventory due to the G-E unit exchange plan. This plan—turning in of worn or inoperative units for already rebuilt units—saves time and stock space.

This is just another example of the efficiency of operation of the G-E 70-ton diesel-electric. Whether it's for switching, road haul, or transfer service, there's a place for this locomotive on your railroad.

For further information on the G-E 70- and 44-ton diesel-electric locomotives contact your nearest G-E sales office. Or send for bulletin GEA-4657A, General Electric Company, Schenectady 5, N. Y.

121-56

GENERAL  ELECTRIC

(Continued from page 99)

Club and the Columbus Chamber of Commerce are sponsoring the luncheon session. In addition to Mr. Knudson, the board will hear vice-chairman C. R. Megee of the Car Service Division of the Association of American Railroads, who will report on current transport conditions. R. A. Whitty, transportation director of the Belknap Hardware & Manufacturing Co., Louisville, Ky., will preside at all sessions in his capacity as general chairman of the board. The meeting will be held in the Deshler-Wallack Hotel.



C. H. Morse, Jr., whose appointment as manager, locomotive service department, of Fairbanks, Morse & Co., with headquarters at Chicago, was reported on page 76 of last week's *Railway Age*

SUPPLY TRADE

American Brake Shoe Sales Totaled \$106,578,958

Sales of the American Brake Shoe Company were \$106,578,958 in 1950, compared with \$91,734,580 in the preceding year, according to the firm's annual report. Net income was \$5,939,289, equal, after preferred dividends, to \$5.17 a common share, compared with \$3,987,844, equal to \$3.22 a share in 1949. Unfilled orders increased from \$13,400,000 at the beginning of 1950 to \$42,000,000 at the year end. On January 31, 1951, the backlog had risen to \$50,700,000. Railway supply materials, the report said, accounted for 51.4 per cent of 1950 shipments.

Midvale Net Income Was \$51,143 Last Year

R. T. Nalle, president of the Midvale Company, has reported that net profit for 1950 was \$51,143 on sales at \$11,394,397. These figures compare with a net loss of \$1,094,387 in 1949 on shipments of \$13,739,443. After crediting the portion of the interest on carry-back refunds of federal income taxes applicable to years prior to 1950, a total amount of \$542,050 was added to earned surplus for the year.

General Railway Signal 1950 Net Was \$1,500,258

Net income of the General Railway Signal Company and its subsidiaries totaled \$1,500,258 in 1950, compared with \$957,454 in 1949, according to the recently released annual report. The net income, after dividends on preferred stock, was equal to \$4.18 on each of the firm's common shares, compared with \$2.54 a share in the preceding year. "The immediate outlook for a satisfactory volume of orders is encouraging," Paul Renshaw, president, said in the report. "The deferred payment plan for signal purchases . . . has met with favorable response from both railroads and fi-

nancial institutions, and we are now processing a number of orders on this basis."

Baldwin-Lima-Hamilton Sales Were \$94,386,752

Consolidated sales of the Baldwin-Lima-Hamilton Corporation and its wholly owned subsidiaries for 1950 totaled \$94,386,752, compared with \$119,002,443 in the preceding year. Net profit was \$3,671,930, compared with \$3,522,223. Figures for last year include operations of the Lima-Hamilton division, formerly the Lima-Hamilton Corporation, for December. Unfilled orders at the year end amounted to \$121,394,299, of which \$34,873,126 pertained to the Lima-Hamilton division, compared with a backlog on December 31, 1949, of \$50,361,584, which did not include Lima-Hamilton.

D. T. Buist has been appointed national sales director of Turco Products, Inc., to succeed Lou H. Moulton, vice-president and national sales director, who recently retired. Mr. Buist joined Turco in 1936 after 20 years of experience in the automotive field, and has worked successively as service engineer, district sales manager, western zone sales manager, and, most recently, as assistant national sales director. Since assuming his new position, he has appointed Stewart B. Van Dyne as administrative assistant and D. T. Miller as coordinator of sales, both newly created positions.

A. G. Postlethwait, president for the past 15 years of the National Bank & Trust Co., Erie, Pa., has been elected vice-president of the Lord Manufacturing Company.

Leslie M. Cassidy, formerly president of the Johns-Manville Corporation, has been elected chairman of the board and chief executive officer to replace Lewis H. Brown, whose

death was reported in last week's *Railway Age*, page 78. Adrain R. Fisher, formerly vice-president in charge of all asbestos mining, has been elected president, succeeding Mr. Cassidy.

The Vapor Heating Corporation, Chicago, has announced transfer of the following sales and service personnel: H. E. Nichols, from Cleveland, Ohio, to New York; R. C. Smykal, from New York to Cleveland; J. H. Paulding, from the main plant at Chicago to Harrisburg, Pa.; J. Murray, from Harrisburg to Philadelphia; and M. K. Loomis, from Philadelphia to the general office at Chicago.

John E. Carroll, general sales manager of the American Hoist & Derrick Co., has been elected vice-president of sales. Mr. Carroll was graduated from the University of Minnesota and in 1937 joined American Hoist as a district representative, working successively in the Texas.



John E. Carroll

Chicago and west coast territories. He resigned his sales position in 1945 to become a partner in the Harron, Rickard & McCone Co. of southern California. Mr. Carroll rejoined American Hoist as general sales manager in 1949.

Clarence B. Bergren, service engineer for the Independent Pneumatic Tool Company, in the St. Louis, Mo., territory, has been appointed Cleveland, Ohio, branch manager, succeeding William J. McGraw. Mr. McGraw has been appointed manager of the New York branch to succeed Edward W. Krantz, who has been appointed Pittsburgh, Pa., manager, succeeding John B. Dempsey. Mr. Dempsey has been appointed manager of the Detroit, Mich., branch.

Lewis P. Favorite has been appointed manager of the New York district office of the Aluminum Company of America, succeeding Edward B. Wilber, whose election as president of the American Lumber & Treating Co. was reported in Rail-

way Age of February 26, page 49. Mr. Favorite joined Alcoa's Detroit, Mich., sales office in 1927. In 1940 he was transferred to the New York district sales office and in 1944 he returned to Detroit as assistant district sales manager. Mr. Favorite was appointed St. Louis, Mo., district sales manager in 1948 and in October 1950 was appointed product manager of die castings, the position he held at the time of his recent promotion.

Carl N. Rydin, formerly with the Chicago, Burlington & Quincy engineering department as engineer and inspector, has resigned to become president of his own company, the Rydin



Carl N. Rydin

Railway Equipment Company, with offices at the Railway Exchange, Chicago. His new company will handle a line of car couplers, including a special all-purpose coupler for motor cars and trailers.

The Lord Manufacturing Company, Erie, Pa., has opened a new field office in Dallas, Tex., at 1613 Tower Petroleum building, with **Bruce O. Todd** in charge.

S. W. Scott has been appointed Pacific district manager for the **Graybar Electric Company**, with headquarters at Los Angeles, Cal., to succeed **H. L. Harper**, who will retire in April. Mr. Scott joined Graybar 22 years ago as a supply salesman. In his new position he will be responsible for supervision of the Pacific district, which includes, in addition to Los Angeles district headquarters, branches at Phoenix, Ariz., San Diego, Cal., and Long Beach. The company also has appointed **L. J. Olivier** as manager of the New Orleans, La., branch house. Mr. Olivier joined Graybar in 1945, as merchandise manager at New Orleans.

OBITUARY

Ernest Murphy, former president of the Pressed Steel Car Company, died on March 4 at his home in Wilton, Conn. He was 67 years old. Mr. Murphy was born in Padham, Eng-

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This particular machine is the new 4-speed Strandflex. No belts are used—a patented gear-drive assembly mounted on the motor permits quick, easy, positive speed change. Entire motor-drive unit, including even the starting switch, is completely enclosed to seal out dirt, dust and grit—and give you many extra years of trouble-free service.

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- Bulletin #43—Four-speed "Strandflex" gear type— $\frac{1}{4}$ to $\frac{1}{2}$ hp
- Bulletin #47—Rotary files and cutters
- Bulletin #48—Wire brushes
- Bulletin #49—Abrasive and grinding attachments
- Bulletin #50—Buffing and rubbing attachments



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land, and received his early education and training in that country. He came to the United States in 1909 and in the same year joined the Butler, Pittsburgh, Harmony & New Castle Interurban Traction Co. as division engineer. In 1911 he joined the Interborough Rapid Transit Company at New York, and from 1917 to 1940 he was associated with the United Traction Company at Albany, N. Y. At the



Ernest Murphy

same time, he was also president of the Capital District Transportation Company in Albany. Mr. Murphy joined Pressed Steel Car in March 1941 at its Hegewisch plant, Chicago, where he was in charge of the Armored Tank division. He later became vice-president in charge of operations, and early in 1945 was elected president. He retired in March 1948.

OVERSEAS

John Elliot New Head of British Railway Executive

John Elliot has been appointed chairman of the British Railway Executive to succeed Sir Eustace Missenden, whose resignation was reported in *Railway Age* of February 5, page 68. Mr. Elliot, born in 1898, was educated at Marlborough and the Royal Military College at Sandhurst. He was in active military service from 1917 to 1920, when he resigned his commission to become a journalist. After five years' experience in that profession, in the United States as well as England, he joined the Southern Railway (England) in January, 1925, as assistant to general manager in charge of publicity and advertising.

In 1930 Mr. Elliot was appointed development officer in the road's then newly formed traffic department. Three years later he was made assistant traffic manager, becoming assistant general manager in 1937. Appointed deputy general manager in 1939, he retained that position until October 1,

1947, when he succeeded Sir Eustace—who had accepted chairmanship of the Railway Executive—as general manager. He became chief regional officer, Southern Region, on January 1, 1948, and was appointed to a similar position with the London Midland Region two years later.

In 1935, with Sir Eustace, he visited this country and Canada to study rail, road and air conditions, and in August, 1947, was awarded the U.S. Medal of Freedom with bronze palm for transportation services to United States forces in Europe during the war.

EQUIPMENT AND SUPPLIES

FREIGHT CARS

The Erie has ordered 500 70-ton gondola cars from the Greenville Steel Car Company and 500 50-ton box cars from its own shops. Authorization to purchase this equipment at an estimated cost of \$6,400,000 was reported in *Railway Age* of January 29, page 59.

The Illinois Terminal has ordered 25 70-ton 65½-ft. mill-type gondola cars from the Greenville Steel Car Company for delivery early next year.

The Western Maryland is inquiring for 1,000 55-ton hopper cars.

LOCOMOTIVES

The Kansas City Southern has ordered four 1,200-hp. diesel-electric locomotive switching units from the Baldwin-Lima-Hamilton Corporation.

The Louisville & Nashville has ordered 67 diesel-electric locomotive units from the Electric-Motive Division of General Motors Corporation. The order includes 10 1,500-hp. road, 31 1,500-hp. freight, 12 1,500-hp. freight "B," 4 1,500-hp. general purpose and 10 1,200-hp. switching units. With exception of the general-purpose locomotives, all will be delivered by October of this year. The four "GP's" are expected for delivery in January, 1952. Authority to purchase this equipment at an estimated cost of \$10,000,000 was reported in last week's *Railway Age*, page 51.

SIGNALING

The Hudson & Manhattan has awarded a contract to the Union Switch & Signal Co. for materials to renew all automatic signal equipment on the system. Field installation will be done by railroad forces.

Pennsylvania.—See page 93.

ABANDONMENTS

Application has been filed with the I.C.C. by:

ATLANTIC COAST LINE.—To abandon four sections of branch line totaling 24.4 mi., all in Charleston county, S. C. The lines are between Hollywood and Puck, 11.4 mi.; between Ravenel and Yonge Island, 5.7 mi.; between Toogoodoo and Gannon, 4.5 mi.; and between Meggetts and Goshen, 2.8 mi.

Division 4 of the I.C.C. has authorized:

READING.—To abandon a portion of its Reliance Colliery branch, approximately 1,045 ft., in Northumberland county, Pa.

ROCK ISLAND SOUTHERN.—To abandon 2.3 mi. of its line between Laws Crossing, Ill., and Main street in Monmouth, and to abandon operation, as lessee, over approximately 15.9 mi. from the latter point to Galesburg. The latter segment is owned by Charles Blair, an individual, who will abandon that line. Certain terminal facilities owned by this road will be sold to the Chicago, Burlington & Quincy, which will continue to serve industries at Monmouth and Galesburg.

CONSTRUCTION

Atchison, Topeka & Santa Fe.

—In connection with construction of a new yard at Carlsbad, N. M., a contract covering clearing and grading has been awarded to G. I. Martin of Albuquerque.

Central of New Jersey.—This road has awarded a contract to the Raymond Concrete Pile Company for a pile foundation at Elizabethport, N. J. Estimated cost is \$36,500.

Chesapeake & Ohio.—This company will start construction soon of a 4½-mi. spur track from Blair, W. Va., on its Coal River subdivision, to a new mining development of the Guyan Eagle Coal Company on Spruce fork of the Coal river in Logan county. Cost of construction is estimated at \$807,065. The new mine operation will have a capacity of 5,000 tons daily. It is estimated the area contains deposits of approximately 87 million tons of recoverable high quality coal.

Chicago & Eastern Illinois.—The I.C.C. has authorized the Chicago, Milwaukee, St. Paul & Pacific to intervene in opposition to this road's pending application for authority to construct a new 3.6-mi. line in Virgo county, Ind. (See *Railway Age* of January 8, page 64.) The C.M.St.P.&P. said it was opposing the C.E.I. application "for the reason, among others, that construction and operation of trackage described in the application would be an invasion of territory tributary to lines of this petitioner and outside territory normally served by the applicant." The Milwaukee said it is willing to construct its own line in this territory, under terms and conditions consistent with sound management. The proposed C.E.I. line would permit that road to serve a plant of the Public Service Company of Indiana.

New York, New Haven & Hartford.—This road has authorized the following projects at the indicated probable costs: Improved platform and drainage at station, New London, Conn. (\$36,800); electric operation of Housatonic River drawbridge, Devon, Conn. (\$95,000); install supervisory control for substations, Cos Cob, Conn. (\$62,748); revise signaling for automatic operation, South Sudbury, Mass. (\$20,958); electric operation of Connecticut River drawbridge, Saybrook, Conn. (\$88,958); and car repair improvements, Maybrook, N. Y. (\$33,750).

Southern.—This road has authorized the following projects, to be undertaken by company forces at the indicated probable costs: Extending passing track at Boligee, Ala. (\$48,030) and at Box Springs (\$40,140); yard track changes at Huntingburg, Ind. (\$45,100) and at Sheffield, Ala. (\$24,511).

Willamina & Grand Ronde.—This road has applied to the I.C.C. for authority to construct and operate a 3.5-mi. line in Douglas county, Ore., from a connection with the Southern Pacific's Portland division, across the Smith river to the town of Gardiner. The application said the line is needed because of present and anticipated industrial development in the area. Securities would be issued to finance the construction, with such securities probably being sold to the road's parent company, the Long-Bell Lumber Company.

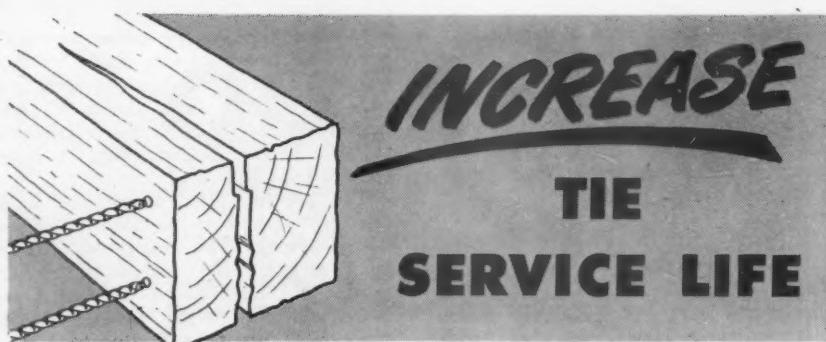
FINANCIAL

P.R.R.-Wabash Complete Acquisition of D.T.&I.

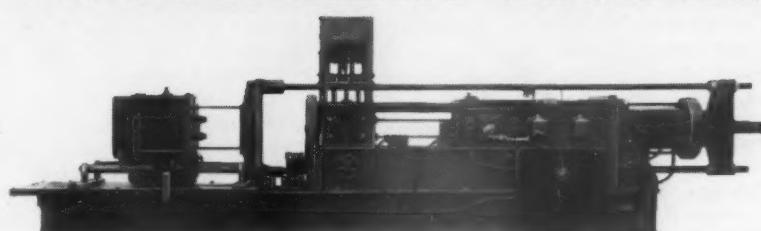
The Pennroad Corporation has sold its ownership of the Detroit, Toledo & Ironton to the Pennsylvania Company (a subsidiary of the Pennsylvania Railroad) and to the Wabash for an aggregate sum of \$25,882,209.50. The transaction involved 245,329 shares of the common stock of the D.T.&I. and was at the rate of \$105.50 per share. The Pennsylvania Company acquired 200,000 of the shares and the Wabash the balance.

Simultaneously, Pennroad sold to Pennsylvania Company 5,100 shares of Springfield Suburban for \$200,481, in a transaction involving all the common stock of the S.S. Immediately after acquisition thereof the Pennsylvania Company sold one half of the S.S. stock to the Erie.

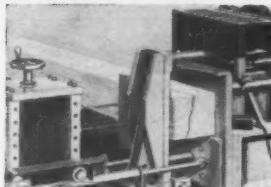
The agreement consummated by the sales was entered into on November 15, 1948, subject to approval of the I.C.C., and was opposed before the commission by several other railroads. Following approval of the transaction by the I.C.C. these railroads filed a



with GIANT GRIP DRIVE DOWELS and the Automatic GRAHAM TIE DOWELLING MACHINE



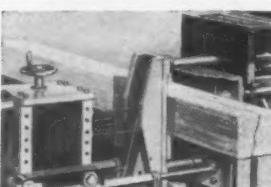
For fast, low cost doweling of railroad ties—investigate the outstanding features and advantages of the modern Graham Tie Dowelling Machine. Furnished in Single or Double Units, this machine automatically drills and applies Giant Grip Drive Dowels into one or both ends of ties. Ties so protected pass through seasoning period, treatment, and road service, enjoying maximum security against end splitting, surface checking, and other causes contributing toward Infant Mortality—net result: maximum tie service life—reduced maintenance cost. Records of railroads now using these machines will convince you that this equipment will save you time, money and effort on all dowelling operations.



First Step—Ties are automatically fed into the machine, equalized for position and squeezed in the vise.



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Third Step—Dowels are automatically screwed into tie by hydraulic pressure, completing operation. Tie is released and is then ejected by incoming tie.

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complaint in the United States District Court for the Northern District of Ohio seeking to enjoin and set aside the commission's approval. On February 9, 1951, the court refused the relief sought and sustained the commission's action. Settlement had been postponed during pendency of that litigation.

Alleghany Corporation.—Suit.—This company's counsel has been authorized to bring suit against the James Foundation of New York, Inc., with respect to purchase by Alleghany and associates of 153,165 common and 55,727 preferred shares of the Western Pacific, according to Robert R. Young, Alleghany chairman. On February 8, Mr. Young said, Alleghany and its associates accepted a proposal of the foundation for purchase of the securities by executing the required form of purchase contract and making the purchase price available. However, he added, the foundation has failed to deliver the stock and this failure forms the basis for the suit.

Chicago, Burlington & Quincy.—Trackage Rights.—This road has applied to the I.C.C. for approval of a trackage rights agreement with the Wabash, covering C.B.&Q. operation over approximately 7 miles of Wabash line between Hulls, Ill., and East Hannibal. The Burlington would construct a 700-ft. connecting track at East Hannibal at a cost of about \$6,000. The agreement provides for payment by the Burlington of \$1 per train-mile, plus one cent per car-mile for cars in excess of 75 in each train. The application at the I.C.C. noted that the Sny Basin Flood Control project, now under consideration by Army engineers, would force the Burlington to abandon 24 miles of its line in this area.

Minneapolis, St. Paul & Sault Ste. Marie.—Equipment Financing.—The First National Bank of Minneapolis, Minn., acting for itself and the First National Bank of Chicago, the First National Bank of St. Paul and the Northwestern National Bank of Minneapolis, has been awarded the financing of a balance of \$1,277,280 after down payments for the following diesel locomotives currently on order: Two 3,000-hp. passenger, one 3,000-hp. freight and two 1,500-hp. road-switchers from Electro-Motive Division of General Motors Corporation, and two 1,600-hp. road-switchers from Baldwin-Lima-Hamilton Corporation. All seven locomotives are being acquired under conditional sale agreements. The winning bid was for an interest rate of 2.625 per cent on a 96-month basis.

New Jersey & New York.—Reorganization.—The Erie has filed with the I.C.C. a proposed plan of reorganization for this road. The N.J.&N.Y. filed a petition for reorganization June 30, 1938, as a subsidiary in the reorganization proceedings of the Erie,

but when the latter's plan was approved no provision was made for the N.J.&N.Y. In 1942 the proceedings were transferred from the U.S. District Court for the Northern District of Ohio to the district court in New Jersey.

The present plan, which the Erie said is the first to be filed, provides the following: The trustee shall pay all reorganization expenses, using funds to be advanced by the Erie. State and municipal taxes, unpaid since 1932, shall be limited to \$305,787.18, also to be paid by the Erie. Mortgage bondholders, with claims totaling \$1,022,960, shall participate in a fund of \$150,000. The Erie, with claims totaling \$1,779,332, will receive nothing, as will other general creditors and shareholders.

Upon consummation of this plan, all property and rights of the N.J.&N.Y. shall go to the Erie, which will then operate the road as a part of its system. The N.J.&N.Y. is "principally a commuter line," and consists of two disjoined segments: 20.6 miles, extending from a junction with the Erie 7.6 miles north of the latter's passenger station at Jersey City, N.J., to Nanuet, N.Y.; and 7.5 miles between Spring Valley, N.Y., and Thiells. The road has rented equipment and facilities from the Erie for many years.

Reading.—Acquisition.—This road has applied to the I.C.C. for authority to acquire control of the Mine Hill & Schuylkill Haven by purchasing the latter's outstanding capital stock. The Reading has operated the Mine Hill properties under lease since 1896. Under the present proposal the Reading would change voting rights of Mine Hill stock so that acquisition of a majority of the stock will carry control. At present the Reading has only 63 out of 6,311 votes, although it owns or controls 40,045 shares of the 82,143 shares outstanding. The Reading would pay \$50 a share for Mine Hill stock purchased under this plan.

New Securities

Application has been filed with the I.C.C. by:

ILLINOIS CENTRAL.—To assume liability for \$3,600,000 of series FF equipment trust certificates to finance in part 42 new diesel-electric locomotive units costing approximately \$4,891,665, as follows:

Description and Builder	Estimated Unit Cost
4 2,250-hp. passenger locomotives (Electro-Motive Division, General Motor Corporation)	\$232,628
35 1,200-hp. switching locomotives (Electro-Motive)	102,890
1 1,500-hp. road-switching locomotive (Electro-Motive)	159,130
2 600-hp. 100-ton SW-1 switching locomotives (Electro-Motive)	80,290

The certificates, to be dated April 1, would mature in 30 semiannual installments of \$120,000 each, beginning October 1, 1951. They would be sold by competitive bids, with the interest rate to be set by such bids.

SEABOARD AIR LINE.—To assume liability for \$2,400,000 of series J equipment trust certificates to finance in part 600 new freight cars costing an estimated \$3,224,000. The cars, all to be acquired from Bethlehem Steel Company, include 300 50-ton high side gondolas, costing \$5,016 each, and 300 70-ton open top hopper cars, at \$5,652 each. The certificates, to be dated April 1, would mature in 30 semiannual installments of \$80,000 each, beginning October 1, 1951. They would be

sold by competitive bids, with the interest rate to be set by such bids.

Division 4 of the I.C.C. has authorized:

PENNSYLVANIA-UNITED NEW JERSEY RAILROAD & CANAL COMPANY.—For the latter to issue and deliver to the P.R.R. \$5,669,000 of general mortgage 2½ per cent bonds, and for the former to assume liability for the bonds. The bonds will be sold by the P.R.R. and the proceeds used to reimburse that road for paying off a like amount of United's general mortgage bonds that became due March 1. Division 4's report approved a selling price of 98.4059 for the new issue of bonds—the bid of Lehman Brothers and three associates—which will make the average annual cost of the proceeds to the P.R.R. approximately 2.84 per cent. The bonds were reoffered to the public at 99.105.

Dividends Declared

Dover & Rockaway.—\$3, semiannual, payable April 2 to holders of record March 31.
European & North American.—\$2.50, semiannual, payable April 3 to holders of record March 10.

Security Price Averages

	Mar. 6	Last Week	Last Year
Average price of 20 representative railway stocks	57.00	57.17	42.75
Average price of 20 representative railway bonds	98.96	99.90	92.60

RAILWAY OFFICERS

EXECUTIVE

T. E. Fox, assistant superintendent of the Joplin and White river divisions of the MISSOURI PACIFIC, at Nevada, Mo., has been promoted to assistant to the chief executive officer, with headquarters at St. Louis, Mo.

T. E. McAndrews has been appointed assistant to the president of the ATLANTIC & DANVILLE at Norfolk, Va.

James A. Argo, assistant general freight traffic manager of the CANADIAN NATIONAL SYSTEM, has been appointed assistant vice-president in charge of traffic of the Canadian lines of the road, with headquarters as before at Montreal, Que. A photograph and biography of Mr. Argo were published in the *Railway Age* of July 22, 1950, page 63. **John V. Maloney**, freight traffic manager of the Grand Trunk Western-Canadian National, has been appointed assistant vice-president in charge of freight traffic of the United States lines of the C.N., with headquarters as before at Chicago. Both appointments will become effective March 15.

Frank S. Steele has been appointed vice-president of the GEORGIA SOUTHERN & FLORIDA (SOUTHERN SYSTEM) and executive general agent of the SOUTHERN SYSTEM at Macon, Ga., effective March 15, succeeding **E. L. Faulconer**, who has been appointed assistant vice-president of traffic of the Southern system at Greensboro, N.C., a newly created post. Mr. Steele was born at Winchester, Va.,

on October 29, 1908, and entered the service of the Southern in August, 1924. Since then he has served in various capacities in the operating department and in the office of the president at Washington, D. C.



Frank S. Steele

Mr. Faulconer was born at Greensboro on October 18, 1898, and entered railway service there in 1919 as a clerk with the Southern. In 1924 he joined the mechanical department of the Atlantic & Yadkin, serving subsequent-



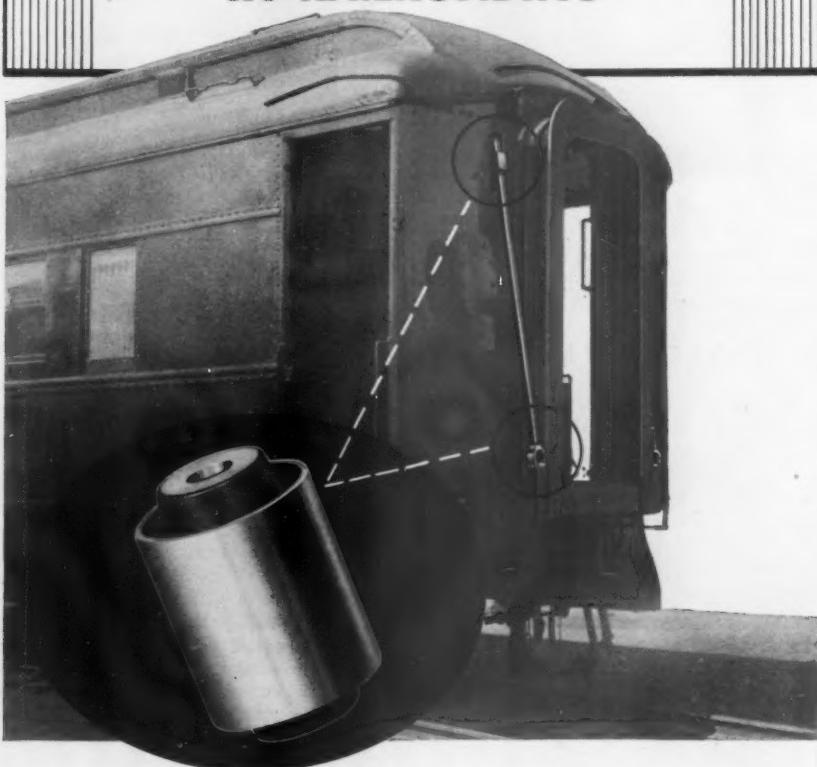
E. L. Faulconer

ly as assistant to general manager, general manager, vice-president and general manager and as president, treasurer and general manager at Greensboro. He was appointed executive general agent of the Southern system at Greensboro in January, 1950. Since last January 15, Mr. Faulconer has been vice-president of the G.S.&F. at Macon.

FINANCIAL, LEGAL & ACCOUNTING

As reported in the *Railway Age* of February 19, M. G. Chew has been appointed treasurer of the SOUTHERN SYSTEM at Washington, D. C. Mr. Chew was born at Washington on April 17, 1892, and entered the service of the Southern as a clerk in the office of the treasurer at Washington on

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August 5, 1908. After serving in various clerical capacities, he was appointed assistant cashier in January,



M. G. Chew

1938. He was promoted to cashier in January 1945, and later that year was appointed assistant treasurer.

OPERATING

As reported in the January 22 *Railway Age*, G. R. P. Graham has been promoted to general superintendent of the CANADIAN NATIONAL's Alberta district, with headquarters at Edmonton, Alta. Mr. Graham entered railroad service in 1922 as a bridgeman in the construction department at Winnipeg, Man. He later served as chainman,



G. R. P. Graham

bridgeman and fireman, and was appointed roadmaster at Edmonton in 1941. Three years later he was transferred to Regina, Sask., subsequently serving as assistant superintendent at Dauphin, Man., and Port Arthur, Ont. He was appointed superintendent of the Port Arthur division in 1947, in which capacity he served until his recent promotion.

Roy Putnam Hart, chief engineer of the MISSOURI PACIFIC LINES, has been appointed chief operating officer, with system jurisdiction and with headquarters as before at St. Louis,

Mo. He succeeds Robert C. White, who has retired, as reported in the March 5 *Railway Age*. **Leonard A. Gregory**, general superintendent of transportation at St. Louis, has been given additional duties as assistant chief operating officer, with system jurisdiction. Born at Springfield, Mo., February 14, 1892, Mr. Hart was graduated from the University of Missouri in June 1913 with a B. S. degree in civil engineering. He started with the M. P. the day after graduation as



Roy Putnam Hart

a timekeeper on a bridge building gang. Subsequently he served as foreman of a bridge building gang, as bridge engineer and as assistant engineer until late in 1943, when he was advanced to assistant chief engineer. Less than two years later he was further advanced to chief engineer in charge of construction and design. In the early autumn of 1949 he was given the title of chief engineer and his jurisdiction was extended to include responsibility for maintenance of track, rights-of-way and bridges over the system.



Leonard A. Gregory

Mr. Gregory was born at Caddo, Indian Territory, on December 1, 1895. Following completion of his schooling at Henderson, Tex., and Tyler, he obtained his first railroad position as a clerk for the St. Louis Southwestern at the Tyler local agency in 1912. He

joined the M. P. in 1919 as chief clerk to the general manager at Houston, Tex., subsequently serving in official capacities in the operating and transportation departments at DeQuincy, La., Palestine, Tex., and San Antonio. In September 1943 he became assistant general manager of the M. P.'s Texas-Louisiana properties at Houston, and held that post until April 1949, when he was promoted to general superintendent of transportation at St. Louis. He will continue to perform the duties of this position in addition to his new responsibilities as assistant chief operating officer.

M. I. Dunn, assistant superintendent freight transportation of the CHESAPEAKE & OHIO, has been appointed superintendent freight transportation, with headquarters as before at Richmond, Va., succeeding **O. H. Carper**, retired. Mr. Dunn was born at Scottsville, Va., on October 29, 1899, and attended Washington & Lee University (B.S. in C.E., 1923). He entered railroad service in 1916 as rodman for the C&O. on valuation surveys, later serving as chainman and instrumentman until 1919. From 1923 to 1924 he was assistant engineer, maintenance of way department, at Clifton Forge, Va., and then became assistant division engineer at Richmond. In 1925 he transferred to Huntington, W. Va., and in 1929 was promoted to division engineer there. He was appointed trainmaster at Handley, W. Va., in 1936, transferring to St. Albans, W. Va., in 1937 and to Peru, Ind., in 1940. In February 1945 Mr. Dunn became superintendent of the Chicago division and on July 1, 1947, was appointed general superintendent at Peru, which position he held until December 1950, when he became assistant superintendent freight transportation at Richmond.

Mr. Carper was born at Grandview, W. Va., on February 23, 1887, and attended Johnson's College, Kimberlin Heights, Tenn.; Massey Business College, Richmond, (1909); and Success Shorthand School, Chicago (1910-1911). He also took a railroad engineering correspondence course. Mr. Carper was employed in mines from 1895, successively as trapper, car coupler, spragger, driver, tracklayer, pick miner and contractor; and later as a locomotive engineer in railway construction work. He entered railroad service in 1910 with the C&O. and served successively as secretary to general baggage agent; stenographer-clerk in the office of the car service agent and the superintendent passenger transportation, successively; secretary to general manager; chief clerk to superintendent freight transportation, superintendent transportation and general superintendent transportation, successively; assistant to general superintendent transportation, and superintendent freight transportation.

Edward T. Reidy, whose appointment as general manager of the CHI-

CAGO GREAT WESTERN, with headquarters at Chicago, was announced in the January 22 *Railway Age*, is a native of that city. Mr. Reidy began his railroad career as a yard clerk with the Baltimore & Ohio Chicago Terminal in 1921. He joined the Great Western in 1926 as a clerk in the superintendent's office at Chicago, and from 1929 to 1933, served as secretary and assistant chief clerk to the operating vice-president. Later Mr. Reidy acted as secretary to the president, and as assistant corporation secretary from 1941 to 1948, at which time he became corporation secretary, the post he held until his new appointment.

C. C. Courtney, assistant to general superintendent transportation of the MISSOURI PACIFIC at St. Louis, Mo., has been appointed assistant superintendent, Joplin-White River divisions, at Nevada, Mo. L. V. Hobbs, assistant trainmaster at El Dorado, Ark., has been advanced to trainmaster at North Little Rock, Ark.

W. M. Morrison and A. L. Pursley have been appointed assistant superintendents of the ST. LOUIS-SAN FRANCISCO at Chaffee, Mo. J. K. Beshears and W. W. Francis have been made assistant superintendents at Amory, Miss., and W. B. McCaffrey becomes terminal trainmaster at Birmingham, Ala.

J. M. Campbell has been appointed superintendent car service of the Central region of the CANADIAN NATIONAL at Toronto, Ont., succeeding N. A. Peters, deceased.

W. F. DeMars, formerly assistant to vice-president and comptroller of the PULLMAN COMPANY, has been appointed manager of Mexican operations.

William F. Betts, statistician of the Car Service Division of the ASSOCIATION OF AMERICAN RAILROADS at Washington, D. C., has been appointed to the newly-created position of assistant to chairman—statistics of that division.

D. W. Benton, chief clerk in the Refrigerator Car Section of the Car Service Division of the ASSOCIATION OF AMERICAN RAILROADS, has been named assistant to chairman—refrigerator cars of that division, a newly-created position. Mr. Benton will have headquarters as before at Chicago. In his new position Mr. Benton will assume the duties of C. W. Taylor, manager of the Refrigerator Car Section, who has left the service of the A.A.R. to accept appointment as director of the Bureau of Service of the Interstate Commerce Commission at Washington, D. C., as reported on page 66 of last week's *Railway Age*. The title of manager of the Refrigerator Car Section has been abolished.

Raymond J. Ebert, chief trainmaster of the ERIE at Hornell, N. Y.,

has been promoted to assistant superintendent of the Mahoning division at Youngstown, Ohio, succeeding Francis X. Garland, who has retired because of ill health, after approximately 35 years of continuous service. Francis E. Navin, trainmaster for the second district of the Mahoning division at Meadville, Pa., has been transferred to the Buffalo & South Western and Meadville divisions, succeeding James D. McFadden, who has been advanced to chief trainmaster at Hornell. Paul J. Seidel, trainmaster of the first district of the Mahoning division at Youngstown, has been transferred to the second district at Mead-

ville. William J. Donnelly, assistant terminal trainmaster, has been promoted to trainmaster of the first district of the Mahoning division, with headquarters as before at Youngstown.

TRAFFIC

As reported in the *Railway Age* of January 29, Charles W. Haynes has been appointed assistant passenger traffic manager of the CHESAPEAKE & OHIO at Richmond, Va. Mr. Haynes was born at Dayton, Ohio, on November 28, 1889, and attended the University of Cincinnati. He entered railroad ser-

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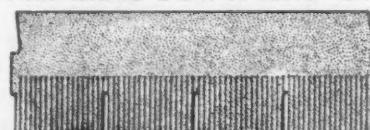
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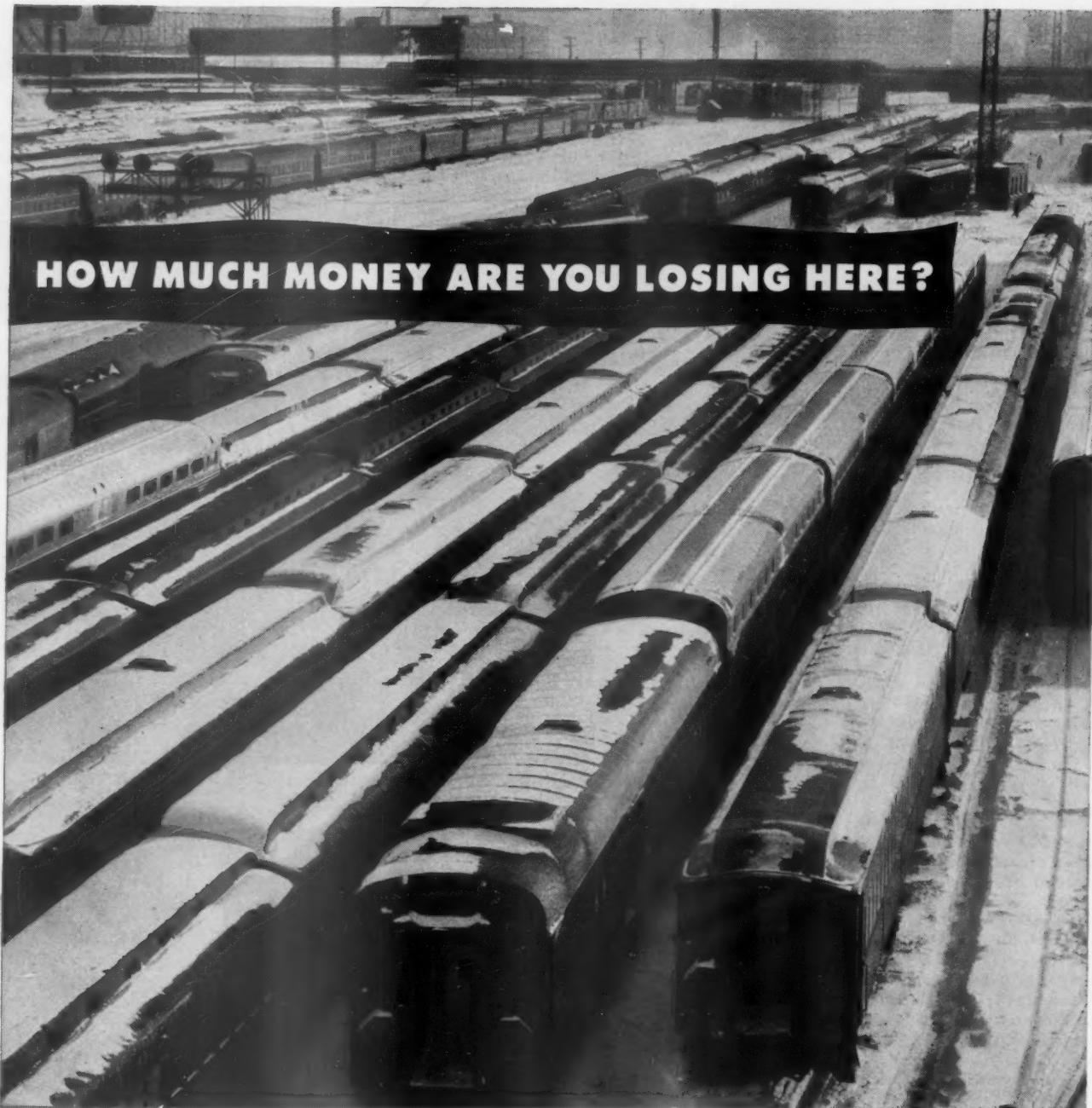
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vice in 1905 as a clerk with the C. & O. at Cincinnati, Ohio, and served in various clerical capacities until 1924. He was appointed division passenger agent at Huntington, W. Va., in 1924; traveling passenger agent at Cincinnati in 1927; northwestern passenger agent at Chicago in 1933; and district passenger agent at Chicago in 1940, subsequently serving as assistant general passenger agent, successively at Cincinnati and Richmond. Mr. Haynes became general passenger agent at Richmond in 1946, which position he held until his recent promotion.

As reported in the *Railway Age* of January 29, George W. Madsen has been appointed freight traffic manager of the ERIE at New York. Mr. Madsen joined the Erie in 1920 and served until 1931 in the Boston, Mass., traffic agency as clerk, commercial agent and



George W. Madsen

perishable freight agent, successively. Subsequently he worked as general agent at Albany, N. Y., and New Haven, Conn.; general New England agent at Boston, and assistant general freight agent at Buffalo, N. Y., before transferring to Chicago in 1945. Mr. Madsen became assistant freight traffic manager at New York in November, 1950.

J. A. Dorvitt has been appointed manager, mail, baggage and express traffic of the KANSAS CITY SOUTHERN LINES, with headquarters at Shreveport, La.

George K. Wenig, Jr., formerly chief clerk in the WESTERN PACIFIC's traffic office at Chicago, has been appointed general agent at that point.

James J. Craig, who has been appointed assistant traffic manager of the TOLEDO, PEORIA & WESTERN, at Chicago, as announced in the January 22 *Railway Age*, was born at Port Allegheny, Pa., December 6, 1921. Mr. Craig entered railroad service in June 1939 on the Delaware, Lackawanna & Western, and the following November became employed on the New York, Chicago & St. Louis at Buffalo, N. Y., as a messenger. Later he served as tracing



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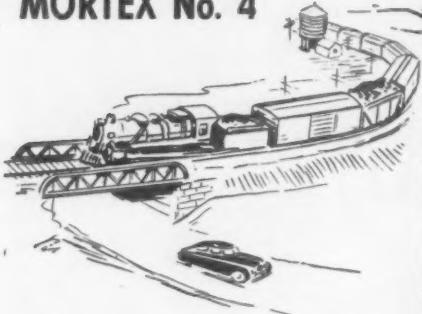
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clerk, until August 1942, when he was furloughed for service in the U. S. Navy. Returning to the Nickel Plate in November 1945, he resumed his position as tracing clerk. He was made chief clerk at Milwaukee, Wis., in June 1946, traffic representative in May 1947, and commercial agent at Peoria, Ill., in January 1949. Mr. Craig has served the T. P. & W. since January 1950, when he became general agent for that road at Peoria, the position he held prior to his new appointment.

Kenneth O. Hemming, commercial agent in the Chicago traffic office of the ERIE, has been promoted to general agent at Peoria, Ill., to succeed **H. J. Spindler**, who has been transferred to Rochester, N. Y., as division freight agent.

The WESTERN PACIFIC has established an off-line agency at Washington, D. C., to handle both freight and passenger information and solicitation. **John P. Conger**, general agent at New York, will become general agent at the New office, which will be located temporarily in the Shoreham building and on or about June 1 will be permanently established in the new Wyatt building.

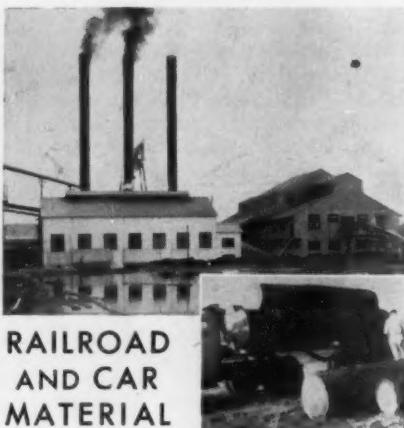
Louis F. McChesney, assistant industrial agent of the LEHIGH VALLEY, has been appointed industrial agent at New York, succeeding **John E. Haas**, who has retired after 40 years of service with the road.

David F. Woods, general freight agent of the CHICAGO & EASTERN ILLINOIS at Chicago, has been appointed acting freight traffic manager. **H. G. Feth**, coal traffic manager, has been appointed general coal traffic manager, with headquarters as before at Chicago. **C. A. Ernst**, general agent at Detroit, Mich., moves to Chicago as assistant freight traffic manager, and **W. L. Burke**, general agent at Milwaukee, Wis., becomes Mr. Woods' successor at Chicago. Succeeding Mr. Ernst is **Louis E. Kilmer**, general agent at Los Angeles, Cal., who is in turn replaced by **William C. Cottingham**, commercial agent at Houston, Tex. **J. P. New**, assistant general agent at Milwaukee, succeeds Mr. Burke. **John P. Quinn**, formerly with the New York, New Haven & Hartford, becomes general agent at the C&E.I.'s newly-opened office at Philadelphia, Pa.

A. N. Anderson has been appointed assistant passenger traffic manager of the CHICAGO GREAT WESTERN, with headquarters at Chicago. He formerly served as traffic agent at Rochester, Minn.

E. J. Wood, district freight agent of the CANADIAN PACIFIC at Ottawa, Ont., has been transferred to Toronto, Ont., succeeding **George Martin**, who has retired on pension after 46 years in the freight traffic department. **Kenneth D. Carmichael**, district

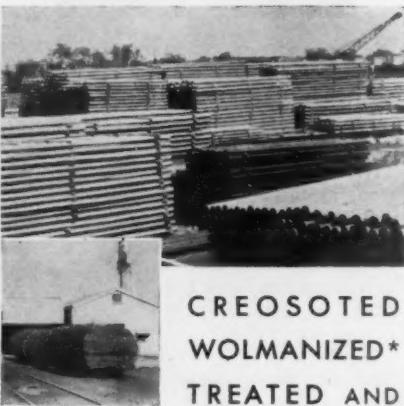
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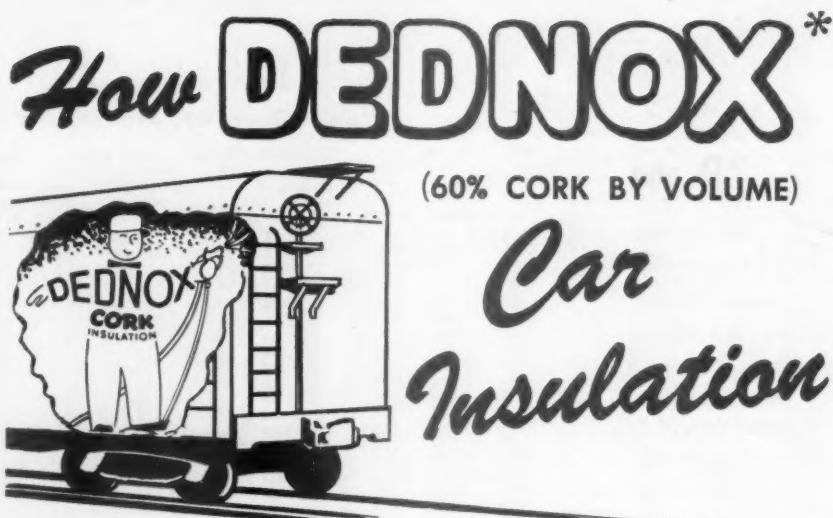


freight agent at Nelson, B. C., has been transferred to Ottawa. **W. J. Grant**, chief clerk to the assistant freight traffic manager at Montreal, Que., has been appointed district freight agent at Moose Jaw, Sask., succeeding **J. A. MacDonnell**, who replaces Mr. Carmichael at Nelson.

Howard L. McLaughlin, general north western freight agent of the CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC at Minneapolis, Minn., has retired. He is succeeded by **George E. Benz**, general agent at that point, who is in turn replaced by **Harry E. Erickson**, general agent at Cincinnati, Ohio. **Raymond T. Dempsey**, traveling freight agent, with headquarters at St. Louis, Mo., moves to Cincinnati, to succeed Mr. Erickson. **George Neu**, division freight and passenger agent at Aberdeen, S. D., has been appointed division freight agent at Minneapolis, and is succeeded by **H. K. Williams**, traveling freight and passenger agent at Mason City, Iowa. Mr. McLaughlin was born at East Aurora, N. Y., February 3, 1886, and entered the service of the Milwaukee in 1900, serving successively until 1906 as clerk, telegrapher and cashier at various points. From 1907 to 1909 he was employed by the Continental Express Company (subsidiary of the Milwaukee) as traffic manager and auditor at Miles City, Mont. In 1910 he became chief clerk to the Milwaukee's traffic manager at Seattle, Wash.; in 1912, general agent at Everett; and in 1917, assistant general agent, freight department, at Seattle. Mr. McLaughlin left the Milwaukee in 1918 to become associated with the Nettleton Lumber Company of Seattle, as mill sales and eastern sales manager at Chicago. On his return to railroading in 1924, he was appointed commercial agent for the Milwaukee at Minneapolis. After serving as general agent at Pittsburgh, Pa., from 1926 to 1939, he was advanced to general north western freight agent.

Alton H. Cooke, assistant to vice-president of the GEORGIA SOUTHERN & FLORIDA, has been promoted to assistant general freight agent of the SOUTHERN SYSTEM, with headquarters as before at Macon, Ga., succeeding **Charles C. Bostwick**, who has been promoted to assistant freight traffic manager at Macon. Mr. Bostwick was born at Atlanta, Ga., on April 2, 1911, and entered the service of the Southern in April 1931 as a clerk at Atlanta, later transferring to Hattiesburg, Miss., and Birmingham, Ala. In November 1940 he returned to Atlanta as chief clerk in the office of the assistant general freight agent and a year later was appointed freight traffic representative. Mr. Bostwick was promoted to commercial agent in October 1945, district freight and passenger agent in August 1946, division freight and passenger agent at Rome, Ga., in April 1947, and assistant general freight agent at Macon a year later.

(Continued on page 116)



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Freight Operating Statistics of Large Steam Railways — Selected

Region, Road and Year	Miles of road operated	Locomotive Miles			Car Miles		Ton-Miles (thousands)			Road-loco. on lines		
		Principal and helper	Train-miles	Light	Loaded (hours)	Per cent loaded	Gross excl.loco. rev. and tenders non-rev.	Net	Serviceable	Unstored	Stored	B.C.
New Eng. Region	Boston & Maine.....1950 1,700	286,496	297,024	14,401	11,533	72.0	701,176	304,137	87	6	9	8.8
	1949 1,701	262,664	270,471	12,696	10,522	69.3	643,322	263,535	86	8	17	15.3
Great Lakes Region	N. Y., N. H. & Hfd....1950 1,771	312,978	313,467	23,123	12,908	72.1	788,476	377,593	99	..	9	8.3
	1949 1,774	268,737	269,567	19,423	11,066	68.8	665,959	291,942	116	11	11	8.0
Delaware & Hudson.....1950 793	271,147	327,868	30,890	12,150	72.9	852,025	474,340	158	28	24	11.4	
	1949 794	215,911	253,571	27,952	9,306	67.7	613,726	299,684	119	57	24	12.1
Del., Lack. & Western.....1950 966	304,171	332,347	36,331	13,754	71.0	893,461	416,424	81	2	45	35.2	
	1949 966	243,058	268,890	28,704	11,635	67.4	750,507	322,999	78	35	35	23.6
Erie.....1950 2,228	728,656	758,982	50,677	40,282	69.3	2,541,981	1,073,367	215	..	22	9.3	
	1949 2,231	609,782	628,759	42,047	33,470	66.1	2,084,914	797,254	160	52	54	20.3
Grand Trunk Western.....1950 974	290,313	299,685	3,301	10,331	65.2	700,631	308,231	60	..	10	14.3	
	1949 971	228,762	237,643	1,856	7,886	65.7	503,507	200,322	55	..	9	14.1
Lehigh Valley.....1950 1,228	259,418	273,709	26,856	13,566	73.1	883,408	431,808	53	2	24	30.4	
	1949 1,239	227,565	236,387	20,676	11,730	66.5	794,426	363,413	68	11	19	19.4
New York Central.....1950 10,691	3,368,850	3,565,341	200,672	125,207	60.4	8,847,812	4,129,582	993	30	364	26.2	
	1949 10,680	2,513,879	2,614,435	134,812	92,577	64.1	5,832,159	2,400,231	820	264	399	26.9
New York, Chic. & St. L.....1950 2,162	816,319	829,876	13,058	32,615	67.9	2,201,276	1,062,566	197	5	36	15.1	
	1949 2,162	596,219	609,669	7,628	23,967	66.5	1,514,853	616,229	163	60	58	20.6
Pitts. & Lake Erie.....1950 221	90,592	93,523	34	3,998	76.7	329,197	204,649	29	..	16	35.6	
	1949 221	21,494	21,614	26	739	63.3	52,909	26,293	12	15	20	42.6
Wabash.....1950 2,381	614,313	623,421	10,261	25,552	70.8	1,609,843	703,478	143	9	70	31.5	
	1949 2,381	620,328	631,738	9,740	23,521	70.1	1,444,779	609,515	150	9	51	24.3
Baltimore & Ohio.....1950 6,086	2,012,997	2,397,406	237,240	76,805	64.7	5,607,968	2,804,374	690	22	226	24.1	
	1949 6,086	1,220,504	1,445,512	150,306	45,920	63.2	3,090,906	1,302,861	543	245	271	25.6
Central of New Jersey.....1950 410	80,084	81,376	4,267	3,124	65.5	234,994	122,570	40	..	6	13.0	
	1949 415	61,517	61,655	3,933	2,339	64.0	168,918	83,326	23	6	18	38.3
Central of Pennsylvania.....1950 212	78,616	87,705	14,611	3,017	68.5	223,661	121,899	38	..	19	33.3	
	1949 212	59,456	64,539	8,916	2,294	63.5	166,712	83,841	25	7	15	31.9
Chicago & Eastern Ill.....1950 886	132,425	132,425	2,621	5,798	71.5	375,096	186,002	26	..	2	7.1	
	1949 909	114,333	114,385	2,631	3,882	71.0	237,751	109,727	38	6	2	4.3
Elgin, Joliet & Eastern.....1950 238	102,186	110,287	1,768	4,499	69.2	356,454	204,180	40	
	1949 238	54,396	54,835	1,723	67.3	119,266	59,129	33	..	1	2.9	
Pennsylvania System.....1950 10,009	3,438,727	3,787,758	402,247	151,590	68.5	10,495,361	5,244,703	1,275	..	318	20.0	
	1949 10,039	2,296,381	2,469,497	267,763	99,905	67.6	6,347,096	2,795,542	1,119	254	456	24.9
Reading.....1950 1,315	397,567	410,724	29,274	15,840	67.7	2,127,308	671,944	182	16	31	13.5	
	1949 1,323	308,967	322,079	29,674	10,238	65.1	749,539	381,116	149	55	59	22.4
Western Maryland.....1950 837	193,381	213,929	27,219	7,141	63.3	583,042	323,010	140	22	16	9.0	
	1949 836	161,673	169,901	8,827	3,072	64.2	221,890	109,674	85	14	7.6	
Pocono Region	Chesapeake & Ohio.....1950 5,042	1,586,125	1,664,098	67,217	69,970	57.4	5,929,490	3,286,716	525	5	178	25.1
	1949 5,041	856,226	892,403	23,518	26,870	64.2	1,760,680	800,869	341	253	141	19.2
Southern Region	Norfolk & Western.....1950 2,105	765,880	802,691	49,063	36,405	58.9	3,169,843	1,710,813	236	18	38	13.0
	1949 2,107	393,014	409,955	21,474	14,398	67.5	963,923	452,545	162	140	52	14.7
Atlantic Coast Line.....1950 5,480	781,769	786,309	12,650	24,099	65.4	1,635,370	770,946	339	6	100	22.5	
	1949 5,507	718,103	724,507	11,816	20,291	63.0	1,385,627	624,867	322	40	79	17.9
Central of Georgia.....1950 1,783	295,208	299,042	4,816	8,275	69.8	540,800	254,025	102	..	9	8.1	
	1949 1,783	268,520	271,664	4,556	7,326	72.0	461,966	216,960	92	4	15	13.5
Gulf, Mobile & Ohio.....1950 2,851	337,760	337,760	95	17,620	74.4	1,118,552	539,734	77	..	6	7.2	
	1949 2,854	328,363	328,363	90	16,260	72.2	1,033,201	480,695	73	21	5	5.1
Illinois Central.....1950 5,643	1,598,310	1,602,468	56,757	59,703	65.2	4,248,523	2,004,618	581	2	74	11.3	
	1949 5,642	372,590	376,145	46,263	50,810	67.5	3,329,237	1,553,592	536	16	103	15.7
Louisville & Nashville.....1950 4,769	1,191,540	1,277,427	35,277	39,803	64.7	2,905,135	1,491,859	319	12	99	23.0	
	1949 4,774	935,077	983,185	21,588	24,806	69.1	1,558,720	747,037	273	147	62	12.9
Nash., Chatt. & St. Louis.....1950 1,049	223,170	225,755	3,714	6,780	74.4	426,916	203,066	74	..	18	19.6	
	1949 1,049	192,627	195,097	2,845	5,881	74.3	358,680	164,816	58	3	4.9	
Seaboard Air Line.....1950 4,136	709,763	738,938	6,256	23,911	66.3	1,643,964	767,448	208	20	44	16.2	
	1949 4,139	677,285	699,959	6,031	20,932	65.4	1,432,151	653,270	225	47	66	19.5
Southern.....1950 6,320	1,340,926	1,350,350	14,119	46,396	71.0	2,893,834	1,315,619	388	16	179	30.7	
	1949 6,179	1,127,053	1,133,981	11,052	38,159	70.4	2,297,912	990,183	435	82	166	24.3
Northern Region	Chicago & North Western.....1950 7,974	1,061,262	1,076,326	27,226	39,232	66.1	2,734,886	1,176,960	299	3	115	27.6
	1949 8,073	976,532	1,008,449	29,155	32,708	66.0	2,183,962	997,594	301	24	146	31.0
Chicago Great Western.....1950 1,441	175,820	175,938	6,401	10,609	71.4	710,496	335,965	33	..	2	8.5	
	1949 1,445	181,579	181,815	8,752	9,524	66.8	612,161	255,029	41	..	4	8.5
Chic., Milw., St. P. & Pac.....1950 10,664	1,517,491	1,585,330	59,853	60,496	64.8	4,121,042	1,872,296	446	33	100	17.3	
	1949 10,663	1,370,972	1,428,725	52,582	49,740	65.4	3,250,653	1,401,125	432	82	75	12.7
Chic., St. P., Minn. & Omaha.....1950 1,606	227,982	236,990	11,742	6,847	68.3	470,506	236,927	70	..	32	31.4	
	1949 1,606	206,917	217,683	10,754	5,925	68.5	395,445	173,709	74	..	33	30.8
Duluth, Missabe & Iron Range.....1950 560	184,630	185,860	1,939	8,944	50.6	906,996	547,717	51	..	2	3.8	
	1949 574	24,967	24,994									

Items for the Month of October 1950 Compared with October 1949

Region, Road and Year	Freight cars on line			G.t.m per	G.t.m per	Net	Net	Net	Car	Net	Train-	Miles	
	Home	Foreign	Total	train-hr.	train-mi.	ton-mi.	ton-mi.	ton-mi.	ton-mi.	ton-mi.	miles	per	
				Per	excl. locos.	per	per l'd	per	car-day	daily	per	per	
New England Region	Boston & Maine.....	1950	1,478	10,214	11,692	3.6	37,623	2,450	1,063	26.4	872	45.9	5,771
		1949	2,914	9,022	11,936	3.4	37,448	2,453	1,005	25.0	731	42.1	4,998
Delaware & Hudson.....	N. Y., N. H. & Htfd.....	1950	1,702	17,995	19,697	1.3	36,624	2,520	1,207	29.3	650	30.8	6,878
		1949	2,481	15,977	18,458	2.7	35,951	2,479	1,087	26.4	528	29.1	5,309
Del. Lack. & Western.....	Erie.....	1950	2,337	7,138	9,475	5.8	57,969	3,157	1,758	39.0	1,612	56.6	19,295
		1949	5,392	4,104	9,496	6.1	48,188	2,855	1,394	32.2	945	43.4	12,175
Grand Trunk Western.....	Lehigh Valley.....	1950	5,121	11,877	16,998	8.9	45,608	2,994	1,396	30.3	807	37.5	13,906
		1949	7,460	17,176	15,636	9.1	44,509	3,145	1,354	27.8	689	36.8	10,786
New York Central.....	New York, Chic. & St. L.....	1950	7,263	23,321	30,584	4.1	59,367	3,517	1,485	26.6	1,102	59.7	15,541
		1949	11,809	14,769	26,573	9.4	58,773	3,441	1,316	23.8	935	59.4	11,528
Pitts. & Lake Erie.....	Wabash.....	1950	3,756	11,567	15,323	5.1	46,805	2,435	1,071	29.8	664	34.1	10,208
		1949	4,462	7,714	12,176	9.3	44,665	2,213	881	25.4	527	31.6	6,655
Baltimore & Ohio.....	Central of New Jersey.....	1950	4,769	12,135	16,904	6.9	64,890	3,473	1,698	31.8	822	35.3	11,343
		1949	8,552	9,168	17,720	11.1	66,103	3,535	1,617	31.0	635	30.8	9,462
Central Eastern Region	Central of Pennsylvania.....	1950	51,360	126,364	177,724	5.6	41,925	2,669	1,246	33.0	749	35.5	12,460
		1949	72,063	72,337	144,400	10.4	40,857	2,350	967	25.9	528	31.8	7,250
Penns. & Ohio Region	Chicago & Eastern Ill.....	1950	4,588	22,243	26,831	3.2	46,341	2,744	1,325	32.6	1,264	57.1	15,854
		1949	13,186	10,052	23,238	3.7	47,967	2,560	1,041	25.7	825	48.3	9,194
Pitts. & Lake Erie.....	Elgin, Joliet & Eastern.....	1950	4,453	11,740	16,193	12.6	50,106	3,650	2,269	51.2	417	11.5	29,871
		1949	9,030	6,306	15,336	10.6	34,446	2,466	1,225	35.6	58	22.6	3,838
Western Maryland.....	Reading.....	1950	6,415	14,735	21,150	2.9	54,101	2,654	1,160	27.5	1,095	56.2	9,531
		1949	7,057	14,118	21,175	3.0	47,616	2,356	994	25.9	910	50.1	8,258
Southern Region	Atlantic Coast Line.....	1950	39,911	52,838	92,749	7.5	37,774	2,841	1,421	36.5	995	42.1	14,864
		1949	59,895	28,726	88,621	14.1	38,518	2,564	1,081	28.4	465	25.9	6,906
Norfolk & Western Region	Central of Georgia.....	1950	580	8,935	9,515	3.8	37,253	3,078	1,606	39.2	403	15.7	9,644
		1949	1,352	7,773	9,125	9.2	36,769	2,836	1,399	35.6	283	12.4	6,477
Illinois Central.....	Louisville & Nashville.....	1950	989	3,797	4,786	14.7	40,111	3,056	1,666	40.4	824	29.8	18,548
		1949	2,914	2,935	5,849	14.0	41,709	2,975	1,496	36.5	460	19.8	12,757
Northwestern Region	Chicago & North Western.....	1950	1,613	4,449	6,062	7.4	45,543	2,840	1,408	32.1	1,020	44.5	6,772
		1949	3,117	3,621	6,738	9.2	34,658	2,091	965	28.3	531	26.4	3,894
Northwestern Region	Seaboard Air Line.....	1950	5,402	13,531	18,933	1.3	21,017	3,676	2,105	45.4	356	11.4	27,674
		1949	6,830	7,313	14,143	1.1	18,474	2,313	1,147	34.3	126	5.5	8,014
Southwestern Region	Seaboard Air Line.....	1950	87,296	126,989	214,285	13.5	44,395	3,155	1,577	34.6	786	33.2	16,903
		1949	147,418	80,851	228,269	15.2	44,036	2,824	1,244	28.0	393	20.8	8,983
Missouri Pacific*#.....	Atch., Top. & S. Fe (Incl. G. C. & S. F. and P. & S. F.)	1950	9,656	21,501	31,157	5.6	38,266	3,063	1,691	42.4	671	23.3	16,483
		1949	17,440	14,152	31,592	9.2	29,705	2,427	1,234	37.2	400	16.5	9,293
Missouri Pacific*#.....	Atch., Top. & S. Fe (Incl. G. C. & S. F. and P. & S. F.)	1950	4,504	4,003	8,507	2.0	41,427	3,056	1,693	45.2	1,270	44.4	12,449
		1949	7,074	2,550	9,624	2.5	32,051	2,242	1,108	35.7	336	14.7	4,232
Missouri Pacific*#.....	Atch., Top. & S. Fe (Incl. G. C. & S. F. and P. & S. F.)	1950	42,936	31,642	74,578	4.9	61,325	3,788	2,100	47.0	1,430	53.0	21,028
		1949	65,891	18,938	84,829	7.1	37,085	2,067	940	29.8	302	15.8	5,125
Missouri Pacific*#.....	Atch., Top. & S. Fe (Incl. G. C. & S. F. and P. & S. F.)	1950	26,395	7,653	34,048	3.8	68,313	4,202	2,268	47.0	1,639	59.2	26,217
		1949	47,188	16,666	53,354	5.3	43,926	2,472	1,160	31.4	282	13.3	6,928
Missouri Pacific*#.....	Atch., Top. & S. Fe (Incl. G. C. & S. F. and P. & S. F.)	1950	10,350	19,641	29,991	3.2	33,448	2,105	992	32.0	847	40.5	4,538
		1949	13,469	15,121	28,590	5.7	30,837	1,940	875	30.8	733	37.7	3,660
Missouri Pacific*#.....	Atch., Top. & S. Fe (Incl. G. C. & S. F. and P. & S. F.)	1950	1,868	6,771	8,639	4.1	31,385	1,840	864	30.7	964	45.0	4,596
		1949	3,102	4,852	7,954	8.1	30,584	1,728	811	29.6	860	40.3	3,925
Missouri Pacific*#.....	Atch., Top. & S. Fe (Incl. G. C. & S. F. and P. & S. F.)	1950	2,935	12,941	15,876	1.1	61,662	3,232	1,603	30.6	1,118	49.1	6,107
		1949	4,728	9,892	14,620	2.8	58,741	3,151	1,466	29.6	1,016	47.6	5,433
Missouri Pacific*#.....	Atch., Top. & S. Fe (Incl. G. C. & S. F. and P. & S. F.)	1950	16,236	36,286	52,522	1.9	45,715	2,688	1,268	33.6	1,304	59.6	9,883
		1949	24,601	28,287	52,888	1.8	42,275	2,454	1,245	30.9	207	43.9	7,661
Missouri Pacific*#.....	Atch., Top. & S. Fe (Incl. G. C. & S. F. and P. & S. F.)	1950	29,819	15,871	45,690	9.8	37,685	2,446	1,256	37.5	1,043	43.0	10,091
		1949	47,914	12,275	60,189	7.7	27,860	1,674	802	30.1	402	19.3	5,048
Missouri Pacific*#.....	Atch., Top. & S. Fe (Incl. G. C. & S. F. and P. & S. F.)	1950	1,061	4,723	5,784	4.1	38,374	1,916	912	30.0	1,090	49.1	6,244
		1949	3,147	3,942	7,089	12.5	36,746	1,867	858	28.0	741	35.6	5,068
Missouri Pacific*#.....	Atch., Top. & S. Fe (Incl. G. C. & S. F. and P. & S. F.)	1950	8,478	15,573	24,051	2.1	40,854	2,377	1,110	32.1	1,027	48.2	12,449
		1949	10,391	13,506	23,897	2.4	38,238	2,159	985	31.2	914	44.8	5,091
Missouri Pacific*#.....	Atch., Top. & S. Fe (Incl. G. C. & S. F. and P. & S. F.)	1950	11,885	28,490	40,375	3.2	35,721	2,177	990	28.4	1,055	52.4	6,715
		1949	17,135	26,404	51,934	5.0	35,920	2,053	885	26.0	722	39.5	5,169
Missouri Pacific*#.....	Atch., Top. & S. Fe (Incl. G. C. & S. F. and P. & S. F.)	1950	17,825	38,514	56,339	3.1	40,724	2,710	1,166	30.0	680	34.3	4,761
		1949	21,354	32,576	53,930	3.2	35,381	2,362	1,079	30.5	598	29.7	3,986
Missouri Pacific*#.....	Atch., Top. & S. Fe (Incl. G. C. & S. F. and P. & S. F.)	1950	1,110	8,9									

Freight Operating Statistics of Large Steam Railways — Selected

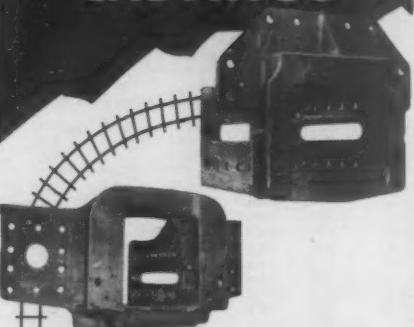
Region, Road and Year	Miles of road operated	Train-miles	Locomotive Miles		Car Miles		Ton-Miles (thousands)		Road-locom. on lines		B.C.	Per Cent B.O.	
			Principal helper	Light	Loaded (hours)	Per cent loaded	Gross excl. locos. rev. and & tenders non-rev.	Net	Unstored	Stored			
New Eng. Region	Boston & Maine.....	1950 1,700	286,496	297,024	14,401	11,533	72.0	701,176	304,137	87	6	9	8.8
	1949 1,701	262,664	270,471	12,696	10,522	69.3	643,322	263,535	86	8	17	15.3	
Great Lakes Region	N. Y., N. H. & Hfd.....	1950 1,771	312,978	313,467	23,123	12,908	72.1	788,476	377,593	99	..	9	8.3
	1949 1,774	268,737	269,567	19,423	11,066	68.8	665,959	291,942	116	11	11	8.0	
Delaware & Hudson.....	1950 793	271,147	327,868	30,890	12,150	72.9	852,025	474,340	158	28	24	11.4	
	1949 794	215,911	253,571	27,952	9,300	67.7	613,726	299,684	119	57	24	12.1	
Del., Lack. & Western.....	1950 966	304,171	332,347	36,331	13,754	71.0	893,461	416,424	81	2	45	35.2	
	1949 966	243,058	268,890	28,704	11,635	67.4	750,507	322,999	78	35	35	23.6	
Erie.....	1950 2,228	728,656	758,982	50,677	40,282	69.3	2,541,981	1,073,367	215	..	22	9.3	
	1949 2,231	609,782	628,759	42,047	33,470	66.1	2,084,914	797,254	160	52	54	20.3	
Grand Trunk Western.....	1950 974	290,313	299,685	3,301	10,331	65.2	700,631	308,231	60	..	10	14.3	
	1949 971	228,762	237,643	1,856	7,886	65.7	503,507	200,322	55	..	9	14.1	
Lehigh Valley.....	1950 1,228	259,418	273,709	26,856	13,566	73.1	883,408	431,808	53	..	24	30.4	
	1949 1,239	227,565	236,387	20,676	11,730	66.5	794,426	363,413	68	11	19	19.4	
New York Central.....	1950 10,691	3,368,856	3,565,341	200,672	125,207	64.0	8,847,812	4,129,582	993	30	364	26.2	
	1949 10,680	2,513,879	2,614,435	134,812	92,577	64.1	5,832,159	2,400,231	820	264	399	26.9	
New York, Chic. & St. L.....	1950 2,162	816,319	829,876	13,058	32,615	67.9	2,201,276	1,062,566	197	5	36	15.1	
	1949 2,162	596,219	609,669	7,628	23,967	66.5	1,514,853	616,229	163	60	58	20.6	
Pitts. & Lake Erie.....	1950 221	90,592	93,523	34	3,998	70.7	329,197	204,649	29	..	16	35.6	
	1949 221	21,494	21,614	26	739	63.3	52,909	26,293	12	15	20	42.6	
Wabash.....	1950 2,381	614,313	623,421	10,261	25,552	70.8	1,609,843	703,478	143	9	70	31.5	
	1949 2,381	620,328	631,738	9,740	23,521	70.1	1,444,779	609,515	150	9	51	24.3	
Baltimore & Ohio.....	1950 6,086	2,012,997	2,397,406	237,240	76,805	64.7	5,607,968	2,804,374	690	22	226	24.1	
	1949 6,086	1,220,504	1,445,512	150,306	45,920	63.2	3,090,906	1,302,861	543	245	271	25.6	
Central of New Jersey.....	1950 410	80,084	81,376	4,267	3,124	65.5	234,994	122,570	40	..	6	13.0	
	1949 415	61,517	61,655	3,933	2,339	64.0	168,918	83,526	23	6	18	38.3	
Central of Pennsylvania.....	1950 212	78,616	87,705	14,611	3,017	68.5	223,661	121,898	38	..	19	33.3	
	1949 212	59,456	64,539	8,916	2,294	63.5	166,712	83,841	25	..	15	31.9	
Chicago & Eastern Ill.....	1950 886	132,425	132,425	2,621	5,798	71.5	375,096	186,002	26	..	2	7.1	
	1949 909	114,333	114,385	2,631	3,882	71.0	237,751	109,727	38	6	2	4.3	
Elgin, Joliet & Eastern.....	1950 238	102,186	102,287	1,768	4,499	69.2	356,454	204,180	40	
	1949 238	54,396	54,835	..	1,723	67.3	119,266	59,129	33	..	1	2.9	
Pennsylvania System.....	1950 10,009	3,438,727	3,787,758	402,247	151,590	68.5	10,495,361	5,244,703	1,275	..	318	20.0	
	1949 10,039	2,296,381	2,469,497	267,763	99,905	67.6	6,347,096	2,795,542	1,119	254	456	24.9	
Reading.....	1950 1,315	397,567	410,724	29,274	15,840	67.7	1,217,308	671,944	182	16	31	13.5	
	1949 1,323	308,967	322,079	29,674	10,238	65.1	749,539	381,116	149	55	59	22.4	
Western Maryland.....	1950 837	193,381	231,929	27,219	7,141	63.3	583,042	323,010	140	22	16	9.0	
	1949 836	101,673	109,901	8,827	3,072	64.2	221,890	109,674	85	85	14	7.6	
Pocahontas Region	Chesapeake & Ohio.....	1950 5,042	1,586,125	1,664,098	67,217	69,970	57.4	5,929,490	3,286,716	525	5	178	25.1
	1949 5,041	856,226	892,403	23,518	26,870	64.2	1,760,680	800,869	341	253	141	19.2	
Southern Region	Norfolk & Western.....	1950 2,105	765,880	802,691	49,063	36,405	58.9	3,169,843	1,710,813	236	18	38	13.0
	1949 2,107	393,014	409,955	21,474	14,398	67.5	963,923	452,545	162	140	52	14.7	
Atlantic Coast Line.....	1950 5,480	781,769	786,309	12,650	24,099	65.4	1,635,370	770,946	339	6	100	22.5	
	1949 5,507	718,103	724,507	11,816	20,291	63.0	1,385,627	624,867	322	40	79	17.9	
Central of Georgia.....	1950 1,783	295,208	299,042	4,816	8,275	69.8	540,800	254,025	102	..	9	8.1	
	1949 1,783	268,520	271,664	4,556	7,326	72.0	461,966	216,960	92	4	15	13.5	
Gulf, Mobile & Ohio.....	1950 2,051	337,760	337,760	95	17,620	74.4	1,118,552	539,734	77	..	6	7.2	
	1949 2,054	328,363	328,363	90	16,260	72.2	1,033,201	480,695	73	21	5	5.1	
Illinois Central.....	1950 6,543	1,598,310	1,602,468	56,757	59,703	65.2	4,248,523	2,004,618	581	2	74	11.3	
	1949 6,542	1,372,590	1,376,145	46,263	50,810	67.5	3,329,237	1,553,592	536	16	103	15.7	
Louisville & Nashville.....	1950 4,769	1,191,540	1,277,427	35,277	39,803	64.7	2,905,135	1,491,859	319	12	99	23.0	
	1949 4,774	935,077	983,185	21,588	24,806	69.1	1,558,720	747,037	273	147	62	12.9	
Nash., Chatt. & St. Louis.....	1950 1,049	223,720	225,755	3,714	6,780	74.4	426,916	203,066	74	..	18	19.6	
	1949 1,049	192,627	195,097	2,845	5,881	74.3	358,680	164,816	58	..	3	4.9	
Seaboard Air Line.....	1950 4,136	709,763	738,938	6,256	23,911	66.3	1,643,964	767,448	208	20	44	16.2	
	1949 4,139	677,285	699,959	6,031	20,932	65.4	1,432,151	653,270	225	47	66	19.5	
Southern.....	1950 6,320	1,340,926	1,350,350	14,119	46,396	71.0	2,893,834	1,315,619	388	16	179	30.7	
	1949 6,179	1,127,053	1,133,981	11,052	38,159	70.4	2,297,912	990,183	435	82	166	24.3	
Chicago & North Western.....	1950 7,974	1,061,262	1,076,326	27,226	39,232	66.1	2,734,886	1,176,960	299	3	115	27.6	
	1949 8,073	976,532	1,008,449	29,155	32,708	66.0	2,183,962	997,594	301	24	146	31.0	
Chicago Great Western.....	1950 1,441	175,820	175,938	6,401	10,609	71.4	710,496	335,965	33	..	5.7	..	
	1949 1,445	181,579	181,815	8,752	9,524	66.8	612,161	255,029	41	2	4	8.5	
Chic., Milw., St. P. & Pac.....	1950 10,664	1,517,491	1,585,330	59,853	60,496	64.8	4,121,042	1,872,296	446	33	100	17.3	
	1949 10,663	1,370,972	1,428,725	52,582	49,740	65.4	3,250,653	1,401,125	432	82	75	12.7	
Chic., St. P., Minn. & Omaha.....	1950 1,606	227,982	236,990	11,742	6,847	68.3	470,506	215,927	70	..	32	31.4	
	1949 1,606	206,917	206,983	10,754	5,925	68.5	395,445	173,709	74</				

Items for the Month of October 1950 Compared with October 1949

Region, Road and Year		Freight cars on line			G.t.m.per train-hr.	G.t.m.per train-mi.	Net ton-mi.	Net ton-mi.	Net ton-mi.	Car miles per car-day	Net ton-mi. daily	Train-mile per train-hour	Miles per day
		Home	Foreign	Total	Per cent	B.O. tenders	excl.loco.	tenders	per train-mile	car-day	per car-day	per road-mi.	per hour
New England Region	Boston & Maine.....	1,478	10,214	11,692	3.6	37,623	2,450	1,063	26.4	872	45.9	5,771	15.4
	1949	2,914	9,022	11,936	3.4	37,448	2,453	1,005	25.0	731	42.1	4,998	15.3
	1950	1,702	17,995	19,697	1.3	36,624	2,520	1,207	29.3	650	30.8	6,878	14.5
	1949	2,481	15,977	18,458	2.7	35,951	2,479	1,087	26.4	528	29.1	5,309	14.5
	Delaware & Hudson.....	2,337	7,138	9,475	5.8	57,969	3,157	1,758	39.0	1,612	56.6	19,295	18.4
	1949	5,392	4,104	9,496	6.1	48,188	2,855	1,394	32.2	945	43.4	12,175	17.0
	Del., Lack. & Western.....	5,121	11,877	16,998	8.9	45,608	2,994	1,396	30.3	807	37.5	13,906	15.5
	Erie.....	7,460	8,176	15,636	9.1	44,509	3,145	1,354	27.8	689	36.8	10,786	14.4
	1950	7,263	23,321	30,584	4.1	59,367	3,517	1,485	26.6	1,102	59.7	15,541	17.0
	1949	11,809	14,769	26,573	9.4	58,773	3,441	1,316	23.8	935	59.4	11,528	17.2
New England Region	Grand Trunk Western.....	3,756	11,567	15,323	5.1	46,805	2,435	1,071	29.8	664	34.1	10,208	19.4
	1949	4,462	7,714	12,176	9.3	44,665	2,213	881	25.4	527	31.6	6,655	20.3
	Lehigh Valley.....	4,769	12,135	16,904	6.9	64,890	3,473	1,698	31.8	822	35.3	11,343	19.1
	1949	8,552	9,168	17,720	11.1	66,103	3,535	1,617	31.0	635	30.8	9,462	18.9
	New York Central.....	51,360	126,364	177,724	5.6	41,925	2,669	1,246	33.0	749	35.5	12,460	16.0
	1949	72,063	72,337	144,400	10.4	40,857	2,350	967	25.9	528	31.8	7,250	17.6
	New York, Chic. & St. L.....	4,588	22,243	26,831	3.2	46,341	2,744	1,325	32.6	1,264	57.1	15,854	17.2
	1949	13,186	10,052	23,238	3.7	47,967	2,560	1,041	25.7	825	48.3	9,194	18.9
	Pitts. & Lake Erie.....	4,453	11,740	16,193	12.6	50,106	3,550	2,269	51.2	417	11.5	29,871	13.8
	1949	9,030	6,306	15,336	10.6	34,446	2,466	1,225	35.6	58	2.6	3,838	14.0
Central Eastern Region	Wabash.....	6,415	14,735	21,150	2.9	54,101	2,654	1,160	27.5	1,095	56.2	9,531	20.6
	1949	7,057	14,118	21,175	3.0	47,616	2,356	994	25.9	910	50.1	8,258	20.4
	Baltimore & Ohio.....	39,911	52,838	92,749	7.5	37,774	2,841	1,421	36.5	995	42.1	14,864	13.6
	1949	59,895	28,726	88,621	14.1	38,518	2,564	1,081	28.4	465	25.9	6,906	15.2
	Central of New Jersey.....	580	8,935	9,515	3.8	37,253	3,078	1,606	39.2	403	15.7	9,644	12.7
	Central of Pennsylvania.....	1,352	7,773	9,125	9.2	36,769	2,836	1,399	35.6	283	12.4	6,477	13.4
	Chicago & Eastern Ill.....	1,613	4,449	6,062	7.4	45,543	2,840	1,408	32.1	1,020	44.5	6,772	16.1
	1949	3,117	3,621	6,738	9.2	34,658	2,091	965	28.3	531	26.4	3,894	16.7
	Elgin, Joliet & Eastern.....	5,402	13,531	18,933	1.3	21,017	3,676	2,105	45.4	356	11.4	27,674	6.0
	1949	6,830	7,313	14,143	1.1	18,474	2,313	1,147	34.3	126	5.5	8,014	8.4
Pocahontas Region	Pennsylvania System.....	87,296	126,989	214,285	13.5	44,395	3,155	1,577	34.6	786	33.2	16,903	14.5
	1949	147,418	80,851	228,269	15.2	44,036	2,824	1,244	28.0	393	20.8	8,983	15.9
	Reading.....	9,656	21,501	31,157	5.6	38,266	3,063	1,691	42.4	671	23.3	16,483	12.5
	1949	17,440	14,152	31,592	9.2	29,705	2,427	1,234	37.2	400	16.5	9,293	12.2
	Western Maryland.....	4,504	4,003	8,507	2.0	41,427	3,056	1,693	45.2	1,270	44.4	12,449	13.7
	1949	7,074	2,550	9,624	2.5	32,051	2,242	1,108	35.7	336	14.7	4,232	14.7
	Chesapeake & Ohio.....	42,936	31,642	74,578	4.9	61,325	3,788	2,100	47.0	1,430	53.0	21,028	16.4
	1949	65,891	18,938	84,829	7.1	37,085	2,067	940	29.8	302	15.8	5,125	18.0
	Norfolk & Western.....	26,395	7,653	34,048	3.8	68,313	4,202	2,268	47.0	1,639	59.2	26,217	16.5
	1949	47,188	6,166	53,354	5.3	43,926	2,472	1,160	31.4	282	13.3	6,928	17.9
Southern Region	Atlantic Coast Line.....	10,350	19,641	29,991	3.2	33,448	2,105	992	32.0	847	40.5	4,538	16.0
	1949	13,469	15,121	28,590	5.7	30,837	1,940	875	30.8	733	37.7	3,660	16.0
	Central of Georgia.....	1,868	6,771	8,639	4.1	31,385	1,840	864	30.7	964	45.0	4,596	17.1
	1949	3,102	4,852	7,954	8.1	30,584	1,728	811	29.6	860	40.3	3,925	17.8
	Gulf, Mobile & Ohio.....	2,935	12,941	15,876	1.1	61,662	3,223	1,603	30.6	1,118	49.1	6,107	18.6
	1949	4,728	9,892	14,620	2.8	58,741	3,151	1,466	29.6	1,016	47.6	5,433	18.7
	Illinois Central.....	16,236	30,286	52,522	1.9	45,715	2,688	1,268	33.6	1,304	59.6	9,883	17.2
	1949	24,601	28,287	52,888	1.8	42,275	2,454	1,245	30.6	907	43.9	7,661	17.4
	Louisville & Nashville.....	29,819	15,871	45,690	9.8	37,685	2,446	1,256	37.5	1,043	43.0	10,091	15.5
	1949	47,914	12,275	60,189	7.7	27,860	1,674	802	30.1	402	19.3	5,048	16.7
Northwestern Region	Nash., Chatt. & St. Louis.....	1,061	4,723	5,784	4.1	38,374	1,916	912	30.0	1,090	49.1	6,244	20.1
	1949	3,147	3,942	7,089	12.5	36,746	1,867	858	28.0	741	35.6	5,068	19.7
	Seaboard Air Line.....	8,478	15,573	24,051	2.1	40,854	2,377	1,110	32.1	1,027	48.2	5,986	19.7
	1949	10,391	13,506	23,897	2.4	38,238	2,159	985	31.2	914	44.8	5,091	18.1
	Southern.....	11,885	28,490	40,375	3.2	35,721	2,177	990	28.4	1,055	52.4	6,715	16.6
	1949	17,135	26,404	43,539	5.0	35,920	2,053	885	26.0	722	39.5	5,169	17.6
	Chicago & North Western.....	17,825	38,514	56,339	3.1	40,724	2,710	1,166	30.0	680	34.3	4,761	15.8
	1949	21,354	32,576	53,930	3.2	35,381	2,362	1,079	30.5	598	29.7	3,986	15.8
	Chicago Great Western.....	1,110	6,895	8,005	2.6	70,353	4,073	1,926	31.7	1,409	62.4	7,521	17.4
	1949	1,406	5,947	7,353	4.8	61,320	3,384	1,410	26.8	1,147	64.1	5,693	18.2
Central Western Region	Chic., Milw., St. P. & Pac.....	23,994	44,629	68,623	2.3	43,036	2,737	1,244	30.9	884	44.1	5,664	15.8
	1949	31,140	33,034	64,174	2.3	38,520	2,401	1,035	28.2	726	39.4	4,239	16.2
	Chic., St. P., Minn. & Omaha.....	1,114	9,074	10,188	3.0	28,763	2,144	984	31.5	669	31.1	4,337	13.9
	1949	861	7,566	8,427	3.3	24,445	1,980	870	29.3	656	32.6	3,489	12.8
	Duluth, Missabe & Iron Range.....	13,550	1,713	15,263	3.4	79,890	5,125	3,095	61.2	1,167	37.7	31,551	16.3
	1949	14,687	225	14,912	3.8	18,720	2,124	557	35.7	29	1.6	757	15.9
	Great Northern.....	21,435	26,218	47,653	2.9	48,566	3,199	1,566	36.5	1,447	61.7	8,229	15.4
	1949	22,385	21,659	44,044	3.8	43,854	2,751	1,206	30.4	916	46.9	5,280	16.0
	Minneapolis, St. P. & St. M												

(Continued from page 113)

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PURCHASES & STORES

Luke K. Burns, fuel supervisor of the BALTIMORE & OHIO, has been appointed fuel agent at Baltimore, Md., succeeding the late **J. E. May**.

MECHANICAL

Paul Lucas has been appointed assistant master mechanic of the CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC, with headquarters at Milwaukee, Wis., succeeding **H. S. Roe**, who has retired.

ENGINEERING AND SIGNALING

George A. McRoberts, assistant division engineer of the SOUTHERN at Birmingham, Ala., has been appointed division engineer there, succeeding **Harry A. Metcalfe**.

William B. Hobbs, director of research of the MISSOURI PACIFIC LINES, has been promoted to chief engineer, with system jurisdiction and with headquarters at St. Louis, Mo. He succeeds **Roy Putnam Hart**, who has become chief operating officer for the system, as announced elsewhere in this issue.

L. L. Lyford, assistant to chief engineer of the ILLINOIS CENTRAL, with headquarters at Chicago, has retired. He is succeeded by **E. F. Snyder**, division engineer at Champaign, Ill. A native of Manly, Iowa, Mr. Lyford is a 1904 graduate of Iowa State College, where he studied civil engineering. He joined the I.C. as an engineering apprentice on the old Freeport division following graduation. During 1905 and 1906 he was assigned to construction of Stuyvesant docks and elevator at New Orleans, La. He served on various divisions as assistant engineer from 1906 to 1916. He was then assigned to track elevation work at Chicago and in 1923 to the construction of Markham Yard. Mr. Lyford was assigned to the chief engineer's office in 1926 and in 1927 became office engineer, being advanced to assistant to chief engineer in 1939.

Mr. Snyder is a native of Barrington, Ill., and a 1917 graduate of the Chicago Technical College. Beginning his I.C. career as a chainman on the Kentucky division in 1917, he was assigned to construction on the Edgewood cut-off in 1924. Four years later he was assigned to track depression at Chicago, and in 1943 was appointed supervisor of track at Bloomington, Ind. Later he served in a similar capacity on the Mississippi division until 1948, when he became division engineer on that division. Mr. Snyder was appointed to a similar post on the Illinois division in 1949.

SPECIAL

Page P. Wagner, assistant chief engineer-construction of the MISSOURI PACIFIC LINES, with headquarters at St. Louis, Mo., has been appointed director of research, succeeding **W. H. Hobbs**, promoted to chief engineer, system, as reported elsewhere in this issue.

V. J. Deckard has been appointed safety supervisor of the ST. LOUIS-SAN FRANCISCO, with headquarters at Springfield, Mo.

Dr. C. H. O'Donnell has been appointed medical director of the NEW YORK CENTRAL SYSTEM (except the Boston & Albany) at Detroit, Mich., succeeding **Dr. D. W. Myers**, resigned.

A. B. Gregory, former financial writer with the United Press at Washington, D. C., has been appointed special representative in the public relations-advertising department of the CHICAGO, ROCK ISLAND & PACIFIC, with headquarters at Chicago.

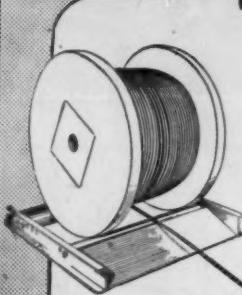
OBITUARY

J. E. May, fuel agent of the BALTIMORE & OHIO at Baltimore, Md., died on February 13.

Sherman V. Reeves, assistant general auditor of the ATCHISON, TOPEKA & SANTA FE at Chicago, died recently in that city after an illness of several months. Mr. Reeves was born at Green Forest, Ark., June 20, 1890, and attended the public schools there. Following his graduation he studied accounting and stenography at Springfield, Mo., Business College. From December 1909 to October 1910 he held a stenographic position on the Missouri & Arkansas, subsequently entering the service of the Santa Fe as a stenographer in the general superintendent's office at La Junta, Colo. After serving in various capacities, he was transferred in 1919 to the general auditor's office at Chicago, where he held several positions before his appointment in July 1942 as assistant to general auditor. Mr. Reeves became assistant general auditor in February 1948.

N. A. Peters, superintendent car service of the Central region of the CANADIAN NATIONAL at Toronto, Ont., died recently. Mr. Peters entered railroad service in 1906 as junior clerk in the office of the general superintendent of the Southern Ontario district of the C.N. at Toronto and subsequently served as stenographer, secretary to general superintendent, chief clerk in the maintenance of way department, chief clerk to general superintendent and district agent. In 1935 he was appointed regional supervisor car service and in 1949 became superintendent car service of the Central region at Toronto.

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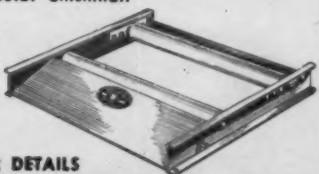
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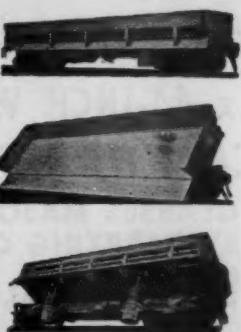
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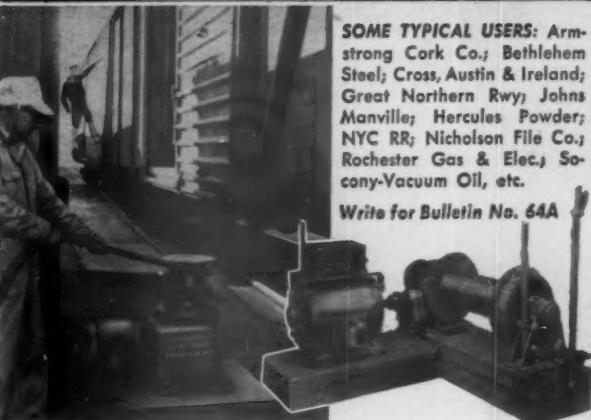
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IN THIS ISSUE

A

- Air Reduction Company, Incorporated 14
 Allied Chemical & Dye Corporation,
 General Chemical Division..... 25
 American Brake Shoe Company,
 Ramapo Ajax Division 98
 American Creosoting Company
 Incorporated 16, 17
 American Locomotive Company,
 Railway Steel-Spring Division 47
 American Optical Company 18
 American Steel Foundries 11
 Automatic Electric Sales Corporation 2

B

- Baldwin-Lima-Hamilton
 Corporation 20, 21
 Barnaby Manufacturing Co., Inc. 51
 Bethlehem Steel Company 28

C

- California Company, The 49
 California Oil Company, The 49
 Canadian Cardwell Co., Ltd. 30
 Cardwell Westinghouse Co. 30
 Chicago Steel Service Company 120
 Classified Department 119
 Continental Foundry & Machine Co. 116
 Cummins Engine Company, Inc. 32,

D

- Dearborn Chemical Company 9
 Dednox Incorporated 113
 Differential Steel Car Co. 117
 Dixie Cup Company 43
 Dyer Co., Inc., W. H. 119

E

- Edgewater Steel Company 19
 Electric Tamper & Equipment Co. ... 29
 Electro-Motive Division, General
 Motors Corporation Back Cover
 Esso Standard Oil Company 53

F

- Franklin Railway Supply Company . 103
 Frost Lumber Industries, Inc. 112

G

- General American Transportation
 Corporation 54
 General Electric Company .. 50, 100, 101
 General Steel Castings 8
 Graham Tie Dowell Service Co. 105
 Great Northern Railway 31

H

- Heywood-Wakefield Company 40
 Hunt Company, Robert W. 119

I

- Industrial Brownhoist Corporation .. 45
 International Nickel Company, I. c.,
 The 35
 Iron & Steel Products, Inc. 119

J

- Jordan Company, O. F. 34

L

- Lehon Company, The 109
 Lord Manufacturing Company 107

M

- Matisa Equipment Corp., The 39
 Met-L-Wood Corporation 38
 Miner, Inc., W. H. 3
 Minneapolis Honeywell 110, 111
 Mississippi Valley Equipment Co. ... 119
 Mortell Co., J. W. 112

N

- Nordberg Mfg. Co. 42

P

- Pittsburgh Plate Glass Company 23

R

- Pressed Steel Car Co., Inc. 10
 Purdy Company, The 117

R

- Rail Joint Company, Inc., The. Front Cover
 Railway Educational Bureau, The ... 119
 Railway Maintenance Corporation .. 46
 Railway Steel-Spring Division,
 American Locomotive Company .. 47
 Ramapo Ajax Division, American
 Brake Shoe Company 98
 Roll-A-Reel 117
 Russell, Burdsall & Wald Bolt and
 Nut Company 44
 Rust-Oleum Corporation 36

S

- S K F Industries, Inc. 22
 Scullin Steel Co. 121
 Sherwin-Williams Co., The 15
 Signode Steel Strapping Company .. 51
 Silent Hoist & Crane Co. 117
 Simmons-Boardman Publishing
 Company 26, 27, 52, 118
 Sinclair Refining Company 12, 13
 Socony-Vacuum Oil Company, Inc. 41
 Standard Oil Company (Indiana) .. 37
 Standard Oil Company of California 49
 Standard Oil Company of Texas 49
 Standard Railway Equipment
 Manufacturing Company 24
 Standard Stoker Company, Inc., The 117

U

- Union Asbestos & Rubber Company 33
 Union Switch & Signal Company ... 6

W

- Waukesha Motor Company 48
 Westinghouse Air Brake Co. 4
 Westinghouse Electric Corporation. 20, 21

Z

- Zone Company, The 52

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